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INDUSTRIAL WORLD

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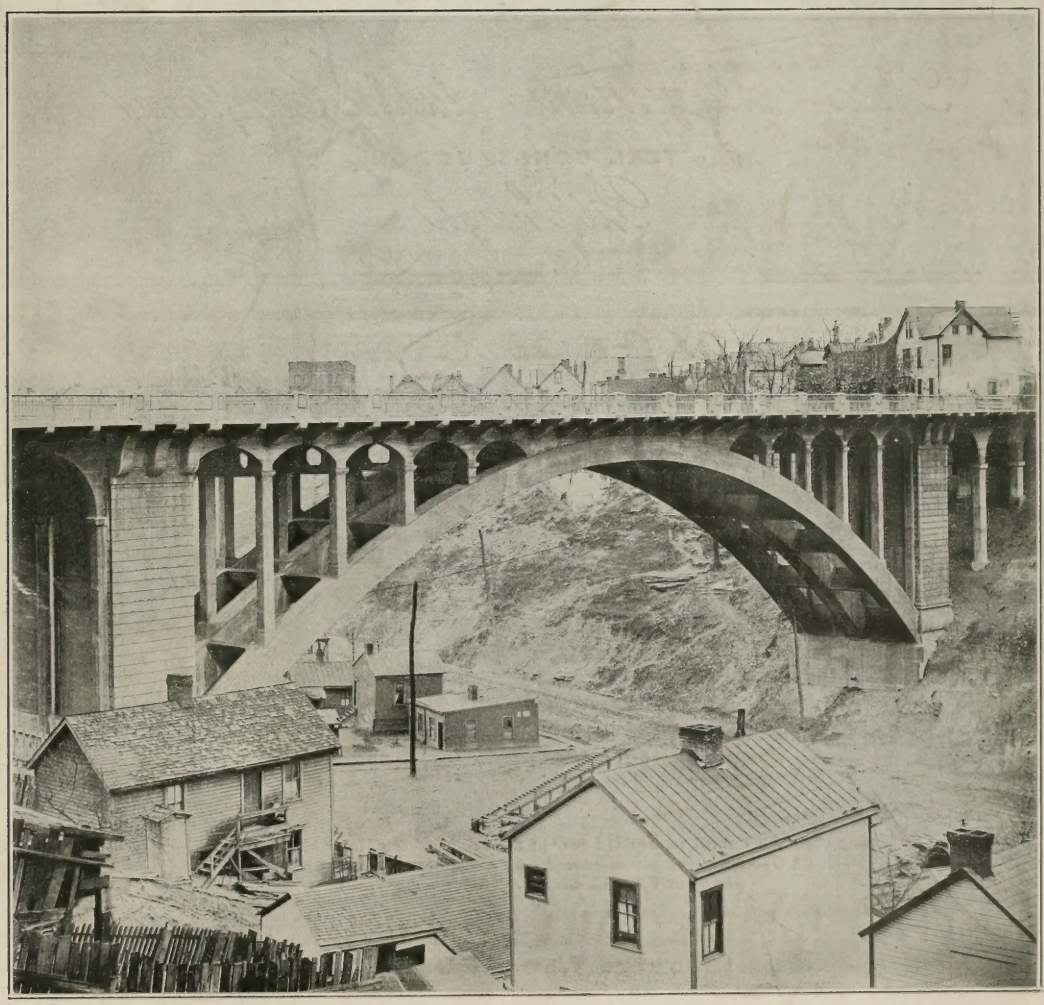
MEADOW STREET REINFORCED CONCRETE ARCH BRIDGE, PITTSBURGH, SECOND LARGEST CONCRETE ARCH IN THE WORLD



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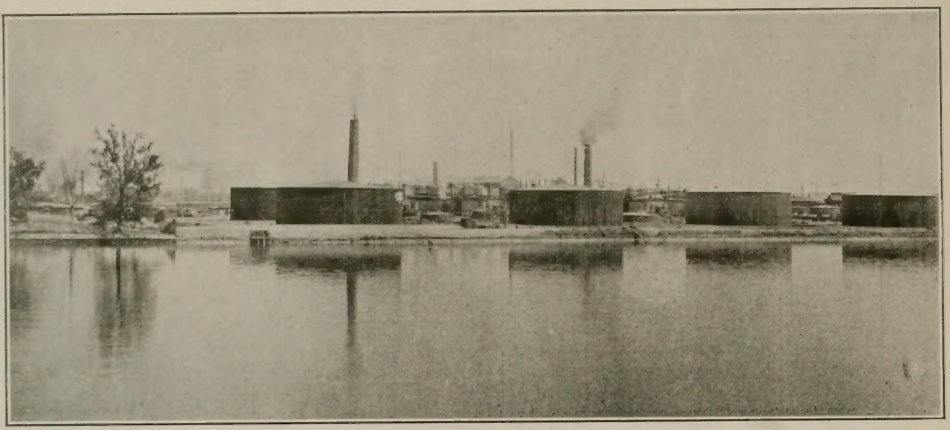


Riter-Conley Manufacturing Company

STEEL CONSTRUCTION

Pittsburgh

3

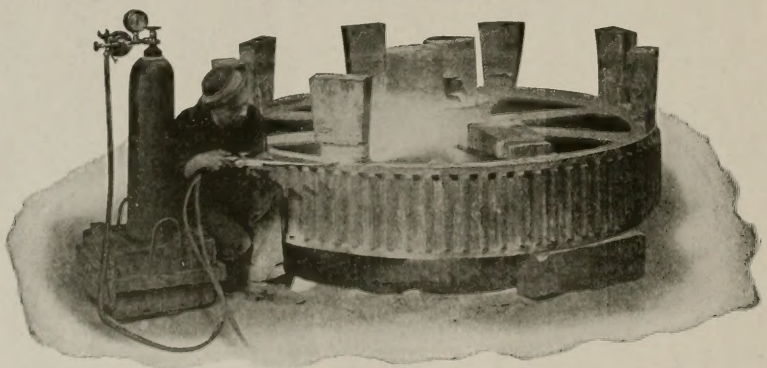
OXY-ACETYLENE

WELDING & CUTTING

APPARATUS

EFFICIENT

ECONOMICAL



SIMPLE

RELIABLE

Cutting risers from machine moulded gear at the Works of the Mesta Machine Company. These Risers which measured 4 in. x 8 in. were removed with the "UNIVERSAL CUTTER" in 1½ minutes each.

THE LINDE AIR PRODUCTS CO.

Head Office and Works: BUFFALO, N. Y.

INDUSTRIAL WORLD

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FORTY-SIXTH YEAR. PITTSBURGH, PA., FEB. 12, 1912. NUMBER SEVEN.

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Summary of General Iron and Steel Markets

PIG IRON.—Specifying for first quarter shipment still heavy, but prices show no tendency toward better levels. little tonnage actually sold in Pittsburgh district, though there are good inquiries in Eastern Ohio. Some No. 2 iron has been sold in the Valleys at better than $13 furnace, the situation in foundry and malleable iron being much better than in basic and Bessemer. January price averages show a falling off from December.

COKE.—Output of Connellsville region for week ending February 3 shows a falling off of 40,000 tons from the preceding week, on account of severe weather conditions and some easing up in operation at furnace plants. Merchant ovens show a consistent gain in output. Prices on spot furnace coke are easier, down to $1.80, as against $1.90 in mid-January. Foundry coke has stiffened, and registers $2.25 for prompt shipment.

CRUDE STEEL.—Billets firm at $20, sheet and tin bars $21, Pittsburgh mill. Carnegie Steel Company is actually sold-up for first quarter on crude steel supply, with all its open hearth capacity in operation. Independent interests not so well filled, and some disposition to shade prices further west of Pittsburgh.

BARS, SHAPES, PLATES. — Shading of $1 a ton by some independent interests at Pittsburgh and points west developed during the week following recent shading by Eastern mills. Prices down to 1.10c flat for shapes, plates and bars, in many cases this concession extending into second quarter. Steel Corporation makes no concessions on 1.15c basis.

SHEETS, TIN PLATE. — Mills comfortably filled; prices are better held than during January, though shading of $1 a ton is still met occassionally.

POINTS ON MARKET

More Pig Iron Capacity.—Jones & Laughlin Steel Company has put in operation one of its four idle blast furnaces at Aliquippa, Pa. Open hearth steel and finishing departments have been operating at Aliquippa for some time. It is understood the first stack will be followed shortly by a second.

Steel Foundries Operations.—Directors of the American Steel Foundries Company report that the earnings for the 17 months to December 31 last, the date of the new fiscal year, is not yet ready but probably will be issued shortly before the annual meeting on March 21. Plants are running at about 50 per cent capacity, a slight lull having been felt following the recent bulge in equipment orders.

January Pig Iron Output.—January showed but small increase over the December rate of pig iron production. The Total output of coke and anthracite iron was $2,057,911 gross tons in December. The largest increase was in Pittsburgh district, which nearly touched its "boom month average" of 500,000 tons—the total for January for this district being 495,099 tons, against 474,266 tons for December.

Pig Iron Averages for December.—The average price of Bessemer iron in January was $14.08 and basic $12.37, at Valley furnace, on actual sales of 1,000 tons and over. These compare with the December averages of $14.19 for Bessemer and $12.44 for basic.

Lucknow (Pa.) Mills Close.—Lucknow (Pa.) skelp and plate mills of Lucknow Iron & Steel Company, near Reading, Pa., closed its plans February 2. Management refused to make any statement. Plant has operated several years almost without interruption.

Increase Open Hearth Output.—All departments of North Sharon works of the Carnegie Steel Company, including six open hearths, were running at close of the week. Company's Columbus plant also in full operation.

Bids on Steel Cars.—Bids went in February 7 on 2,500 freight cars for the Bessemer & Lake Erie Railroad. The

Wabash inquiry is for 3,000 steel and steel underframe cars, and 15,000 tons of standard rails. The Western Maryland is understood to be about ready to issue inquiry for 1,000 box cars, 750 hopper cars and 1,000 composite gondolas. The American Car & Foundry Company has received an order for 80 tank cars for a Texas railroad. Car orders with Pittsburgh interests have been small.

TO OPERATE BROWN- KETCHUM.

Indianapolis Owners Arranging Technicalities of New Charter.

Henry H. Hornbrook, of Indianapolis, Ind., who was attorney for the creditors of the embarrassed Brown-Ketcham Iron works, just south of Greensburg, Pa., and also attorney for the Noelke-Richards Iron Company, which has taken over the Greensburg works of the embarrassed concern, is drawing up the charter of the new concern. The Noelke-Richards Company is an Indiana corporation and as the laws in the several States differ widely some changes must be made by the Indiana concern in operating in Pennsylvania.

It is understood that the Greensburg plant will be started with a full force on March 1 by the Indinnapolis owners.

ROLLING RECORD BROKEN.

Colorado Fuel & Iron Management Makes New Claim.

The management of the Minnequa works of the Colorado Fuel & Iron Company, Pueblo, Colo., announced on February 6 that No. 1 rod mill at that plant had established a new tonnage record for 12 hours, on February 5.

The management submitted copies of rolling report on No. 1 mill, covering the tonnage of No. 5 rods rolled. It shows 764,305 4-inch Bessemer billets charged and 707,876 No. 5 rods produced —a total of 316.0 tons, and a percentage of 92.6. The output of scrap and crop ends was 1.4 per cent. The maximum was 2:20 change passes in 10 minutes.

MAKE STEEL AT TATA, INDIA.

Pittsburgh Builder Receives Word of Rolling First Metal.

Word was received by cable last week by Julian Kennedy, Pittsburgh engineer, that the first steel had been rolled by the blooming mill on February 6 at the new plant of the Tata Iron & Steel Company, at Kalimati, India.

As noted in the INDUSTRIAL WORLD on January 29 (Page 131), the first iron was made in the new blast furnace on December 1. The open hearth steel furnaces were started late in January.

EQUIPMENT NEWS OF THE DISTRICT.

Stoker Installations.

To secure economy of operation and reduce production of smoke the following installations of improved power equipment are being made: American Foundry & Construction Company, Hazelwood, two Murphy stokers, each to operate a boiler of 150 horsepower; Atlantic Refining Company, Pittsburgh, two Jones Underfeed stokers, each to operate a boiler of 150 horsepower; Crucible Steel Company, Pittsburgh, six Sterling boilers each of 500-horsepower capacity, to be operated by Playford chain grate stokers manufactured by the Rosedale Foundry & Machine Company, Northside, Pittsburgh.

Air Compressors.

Officials of the Pennsylvania Lines West have placed an order with local representatives of the Ingersoll-Rand Company for the installation of 12x12 inch air compressors at Conway yards and at Cleveland. The compressors will be operated by Westinghouse motors and Cutler-Hammer controllers.

New Galvanizing Plant.

McCance Brothers, 305 Seventh avenue, Pittsburgh, manufacturers of galvanized sheets, angles and other shapes, have awarded a contract for the erection of a new galvanizing plant at Verona, Pa. The buildings will be of structural steel construction. Work on the improvement will be commenced immediately.

Contract for Steel Work.

John L. Mullen, constructing engineer, Union Bank building, Pittsburgh, has been awarded a contract for the steel work of the E. W. Edwards department store building, Rochester, N. Y. The building will be 80x150 feet, ten stories and will require approximately 1,500 tons of steel.

For Mills at Youngstown.

The Raymond Concrete Pile Company with offices in the Union Bank building, Pittsburgh, has taken contracts for foundation work for the Youngstown Sheet & Tube Company, Youngstown, which will include approximately 4,000 concrete piles; foundation work for the Frick & Lindsay warehouse building, Northside, Pittsburgh, including 422 concrete piles and municipal docks for the city of Los Angeles, Cal.

Demand for Car Wheels.

The car wheel department of the Pennsylvania Malleable Company's plant at McKees Rocks was put on double turn last week. The steel castings department is being operated at capacity and the malleable iron department is approaching capacity.

Ohio River Slackwater Work.

The J. & J. B. Milholland Company, Pittsburgh, is completing several orders for structural and cast steel work for locks and dams on the Ohio river. Last week the company received an order for castings and structural work required for new gates at Lock No. 1, a few miles below Pittsburgh, and a contract for valves for a lock being constructed at Hedalga Falls, near Dallas Texas.

New Oil Engine of Grove City Company

The new oil engine recently put on the market by the Bessemer Gas Engine Company, Grove City, Pa., is being used extensively in California and the southwest for irrigation purposes. The following sales are reported for the month: T. A. Gillespie, Garden City, Kas., eight 150-horsepower engines; D. T. McDonald & Company, Hereford, Texas, two of 60, two of 50 and two of 40 horsepower; R. D. Yoakum, Portales, New Mexico, 35 horsepower; J. T. Edwards, Tennis, Kas., 60 horsepower; W. H. H. Garver, Perris, Cal., 20 horsepower engine and 80 horsepower compressor; H. S. Knight, Bakersfield, Ca., 40 horsepower.

Gas engine sales by the company include: Pittsburgh Pipe Line Construction Company, Pittsburgh, 25 horsepower; Sterling Brass Company, Cleveland, 36 horsepower; Valvaline Pipe Lines Company, Canonsburg, Pa., 50 horsepower; American Bauxite Company, Bauxite, Ark., 35-horsepower; Leachmans Laundry, Dallas, Tex., 90 horsepower; Independence Motor Car Company, Independence, Kas., 35 horsepower; B. & B. Oil & Gas Company, New Matamoras, Ohio, a 35-horsepower direct driven air compressor.

Locomotive Too Big for Tunnel.

Because the tunnel at Ellwood City is too small for them to pass through, several new locomotives for the Baltimore & Ohio Railroad, the largest ever seen in Pittsburgh, were taken through the city on the Pittsburgh & Lake Erie Railroad last week. They were being transferred to the Baltimore & Ohio at Dexter, near McKeesport, and from that point will go east for service on the mountain divisions.

The locomotives are of the Mallet type and are part of a large owner placed some time ago. They are compound engines with two sets of cylinders and

driving wheels and will do the work of two ordinary freight engines. They have 10 driving wheels and four leading and trailing wheels and weigh 465,000 pounds each without the tender. They were built at Schnectady, N. Y.

Need Yard Room at Monessen.

Simultaneously with preparations by the Pittsburgh Steel Company to begin the construction of its new blast furnace at Monessen, Pa., the Pittsburgh & Lake Erie Railroad Company is looking for additional facilities to take care of its cars. The railroad company has bought property close to the present freight station. It is understood an effort is being made to take over an entire block in the heart of the town to allow for additional yard room.

SHEET AND TIN PLATE.

New Association, Formed in December, Is Granted Charter.

The Allegheny county courts on February 6, granted a charter to the "Association of Sheet & Tin Plate Manufacturers," which organized at a meeting in Pittsburgh on December 19 last—a full account of the preliminary organization of the body having been given by the INDUSTRIAL WORLD of December 25 (Page 1544).

As stated by the INDUSTRIAL WORLD at the time, and distinctly specified in the charter, the new organization is not organized for profit, has no capital stock, and gives as its principal objects the stimulation and exploitation of the use of sheet steel and tin plate; the betterment of labor conditions and the collection of facts with relation to the industry.

The directors of the association are:

W. S. Horner, district manager at Pittsburgh, of the American Rolling Mill Company, Middletown, O.

R. D. Campbell, treasurer of the Allegheny Steel Company, Brackenridge, Pa.

W. A. Thomas, president of the Brier Hill Steel Company, Youngstown, O.

Joseph B. Andrews, of the Newport Rolling Mill Company, Newport, Ky.

George W. Neidringhaus, second vice president of the National Enameling & Stamping Company, St. Louis, Mo.

J. E. Carnahan, president of the Carnahan Tin Plate & Sheet Company, Canton, O.

There are six directors, the charter providing for seven, and a vacant position being left purposely. The officers are: W. S. Horner, president; W. A. Thomas, vice president, and R. D. Campbell, treasurer.

CINCINNATI. — Eagle White Lead works, Hunt street and Broadway, practically destroyed February 2; loss $100,000.

W. W. SOMMERVILLE DEAD.

Well-Known Figure in Iron and Brass Circles Passes Away.

W. Watson Sommerville, proprietor of the Sommerville Iron & Bronze Company, Fifty-sixth and Butler streets, Pittsburgh, died at his home, 208 Brilliant avenue, Aspinwall, February 8, from pneumonia, after a brief illness. Mr. Sommerville was 47 years of age. He was born in Scotland and came to the United States in 1899, locating here in 1907. He was an expert in ornamental iron work and became identified with the W. N. Kratzer Company, where he remained about two years, in 1904 founding the company bearing his name.

Mr. Sommerville was a member of the Manufacturers and Contractors' club of Pittsburgh, and took an active interest in its management since its organization. He was a member of Milnor Lodge No. 287 F. & A. M., the Pittsburgh Athletic Association, the Pittsburgh Association of Credit Men, and the Stanton Heights Golf Club. He is survived by a widow and one daughter.

FOR CASTINGS PLANT.

New Industry to Be Established Near Chester, Pa.

On a five-acre tract along the Pennsylvania Railroad, near Chester, Pa., the Eagan-Rogers Steel & Iron Company is erecting buildings for the manufacture of steel and iron specialties.

The firm was recently incorporated under the laws of Pennsylvania with a capitalization of $100,000. Contract for the construction of the buildings has been let to the McClintic-Marshall Construction Company. The plant will be located in the Chester district, between Crum Lynne and Eddystone.

Light steel castings up to 200 pounds in weight, gray iron castings and other specialties will be made. Daniel C. Eagan and John I. Rogers are the leading members of the company. Mr. Eagan, son of the late Daniel Eagan, of American Steel Foundries Company, has had wide experience in the iron and steel industry. Mr. Rogers, an engineer, was formerly with the Midvale Steel Company.

Test Massachusetts Liability Law.

The casualty and surety companies of the country are preparing to fight the proposed amendment to the Massachusetts State insurance law which goes into effect on July 1. The contemplated amendment would practically forbid the operation of stock employers' liability companies.

Try a Want or For Sale ad in the INDUSTRIAL WORLD.

MILL MANAGERS

Announced by Newly Organized Youngstown Steel Interest.

W. A. Thomas, president of the Brier Hill Steel Company, the newly organized Youngstown-Niles concern, has announced that Henry C. Davis had been appointed general manager of the Thomas mill, and that W. T. Hardesty had been appointed to the same position at the Empire mill, both located in Niles. Both these finishing plants are operating practically full.

The company opened offices at the Stambaugh building, Youngstown O., on February 1.

There are many queries as to how many open hearth furnaces will be built at Brier Hill, but the directors themselves say they do not know. It has been currently reported that 12 would be constructed eventually, though it is thought likely the initial construction will be six or eight units. The engineers who are to draw the plans have not yet been selected.

Judge James B. Kennedy, of Youngstown, has been elected general counsel of the new company.

Youngstown Sheet & Tube May Absorb Another Furnace.

The Youngstown Sheet & Tube Company, of Youngstown, is negotiating for the taking over of the blast furnace of the Ohio Iron & Steel Company, Lowellville, O. This matter has been considered by the two companies several times in the past without result. It is now probable, however, that a deal will go through for the purchase of the furnace company's property. This will give the Youngstown Sheet & Tube Company a total of four blast furnaces, with an aggregate daily capacity of close to 2,000 tons of pig iron. Mary furnace of the Ohio Iron & Steel Company is strictly a merchant furnace, selling its product in the open market, and its sale to the Youngstown Sheet & Tube Company will be following out the tendency of the blast furnace owners in the Mahoning Valley to ally themselves with steel making concerns. President James A. Campbell, of the Youngstown Company, refused to be quoted on the report.

Extensions to Be Made at Youngstown.

Stockholders of the General Fireproofing Company, Youngstown, O., at a meeting January 30, decided to build an addition to the company's steel furniture department at Crab Creek, near Youngstown. The new building is to be an addition to the present furniture building. It is to be four stories in height. Plans have been accepted and the contract is to be let at once. It is just a year since

an addition to the furniture department was completed.

W. H. Foster was elected president, succeeding M. I. Arms, who was made chairman of the board of directors. Mr. Foster, the new president, has been vice president and general manager. In his new position he will continue to be the active head of the plant. Mr. Arms resigned the presidency as he wished to be relieved of active care and responsibility. The other directors elected are W. H. Foster, John T. Harrington, A. P. White, C. H. Booth, W. P. Arms and Henry Wick.

The officers are: W. H. Foster, president; M. I. Arms, chairman of the board of directors; A. P. White, vice president; John T. Harrington, vice president; F. K. Rhines, treasurer; R. M. Bell, secretary.

"OLD GUARD" OF REPUBLIC CO.

Dined by Col. George D. Wick and A. W. Thompson, at Youngstown.

The "Old Guard" of the Republic Iron & Steel Company were guests at a banquet given February 3, at Youngstown, O., by Colonel George D. Wick, prominent in Youngstown iron and steel circles, and Alexis W. Thompson, president of the Inland Steel Company, of Chicago. Invitations were issued to 50 men, who have been during the past or at the present time, prominently connected with the Republic Iron & Steel Company.

Mr. Thompson was the second president of the company. Mr. Wick, who is a Youngstown man, was the first vice president of the Republic, having been one of the organizers of the company in 1899. The dinner brought together a number of the captains of industry of the Mahoning and Shenango valleys, as well as prominent iron and steel men of other cities.

Addresses were made by John A. Topping, chairman of the Republic Company; Joseph G. Butler, Jr., of Youngstown; James A. Campbell, president of the Youngstown Sheet & Tube Company; David Thompson, of Cleveland, and others. Those present from Pittsburgh included S. G. Cooper, E. N. Ohl and George L. Claypool. Severn P. Ker, now of the Sharon Steel Hoop Company; President T. J. Bray, of the Republic Company, Colonel Wick and J. W. Deetrick, in charge of the Youngstown district mills of the company, spoke informally.

West Varnish Company, Everett; paints, varnishes, etc.; $60,000. Samuel Powers, Benjamin Webster, Walter T. Hannigan, 101 Milk street, Boston.

TRADE MEETINGS

Structural Section, Engineers' Society of of Western Pennsylvania.

The annual meeting of the Structural Section, Engineers' Society of Western Pennsylvania, was held at Engineers' hall, H. W. Oliver building, Pittsburgh, on the evening of February 6. A. L. Hoerr, the retiring chairman of the section, delivered his annual address and retired in favor of W. E. Snyder, the newly elected chairman. The officers of the section for the incoming year were announced as follows:

Chairman—W. E. Snyder, mechanical engineer, American Steel & Wire Company.

Vice Chairman—George H. Neilson, vice chairman and general manager, Braeburn Steel Company.

Directors—F. B. Hufnagel, general superintendent, Southside plant, Jones & Laughlin Steel Company; A. H. Hielander, second vice president Mesta Machine Company; R. A. L. Snyder, plant manager, Central District & Printing Telegraph Company.

Mr. Hoerr's announced subject was: "Notes on the Development of Engineering Supervision in Industrial Plants." His address was a very succinct review of the progress of the last 15 years in the development of engineering supervision out of the old rule-of-thumb methods that prevailed in electrical, machine, foundry and iron and steel establishments —with especial reference to the development of sytematic management of the power department. The growth of power engineering from the simple organization originally devised by the master mechanic had been so rapid that it was not even to-day wholly appreciated by the industrial bureaucracy, the speaker intimated. The demand for more steam led to cheaper steam; to a more careful supervision of fuel consumption. Water tube boilers, then stokers, then ash handling and water purifying systems followed. Motors, compound engines and condensers were brought in; then economizers, superheaters, the gas engine and the low pressure turbine.

He detailed the manner in which modern power plant practice had grown into a harmonious structure of records and tests, of data for the study of the engineer; and the engineer, he believed, is to-day far from his limit in power plant economies even under modern industrial conditions.

The speaker, in closing, dwelt on the rewards of the mechanical engineer of to-day. "The engineer," he exhorted, "must be more than a mere calculating machine. In an age when technical education is so easily obtained, no man can expect great rewards for his skill in assembling technical data and manipulating it. As engineers, we have been taught that the aim of our profession is to subdue the forces of nature; but we have not been taught with sufficient force that mankind is one of these forces. We respect nature's limitations; but we do not hesitate to trample on man's pet hobbies.

"The perfect steel has not been attained. We therefore design our machines to suit the materials we have at hand. Likewise we should study human nature. Our pet ideas may be received with indifference by the man whose decision we await. The man, in his treatment of our plans, may not be all we hope. So we must get to know him—we must plot him, so to speak, as we would any other force.

"Many of our difficulties are the outcome of our engineering education and training. It is not good for us to immerse ourselves too greatly in our profession. This world had the age of the theologian, the jurist, the physician. Then came the trained scientific man. But the scientific man would profit by a study of the errors of those dominant professions of the other age. We must exert ourselves along other than strictly scientific lines—we must study social and economic problems, along with mechanical ones."

And in conclusion, the speaker asserted it to be his belief that "every man gets just what is his due, all things considered, in the long run.

In the discussion that followed the address, some of those present inclined to the reminiscent. Lee C. Moore recalled a Corliss engine built by Charles Hood in 1885, which was 24x48, with a maximum of 120 turns a minute. President J. O. Handy, of the Engineers' Society, quoted a speaker at the receent chemical convention at Indianapolis with having said that the man who can only make an analysis was not the man for whom great concerns were searching, but rather the man who knew how to apply the analysis. There was some story-telling, harking back to the "rule-of-thumb" days, participated in by Chairman Snyder, C. W. Danforth, Chester B. Albree, Arnold Stucki, Secretary E. K. Hiles and others.

Sons of Jove.

The Thursday lunch of the Sons of Jove, at the Fort Pitt hotel, Pittsburgh, was attended by 80 members and was presided over by F. C. Albrecht, of the Westinghouse Company. During a discussion of matters pertaining to electrical interests announcement was made that the membership of the organization is approximately 500 and that permanent quarters should be secured. The suggestion was favorably received and M. F. Knapp, of the General Electric Com-

pany and J. D. McCurdy, of the Allegheny County Light Company, were appointed a committee to recommend suitable quarters.

J. W. Richards to Speak on "The Electric Furnace."

Prof. J. W. Richards, of Lehigh University, one of the acknowledged authorities on electric furnace practice in this country, will address the Engineers' Society of Western Pennsylvania on Saturday evening, February 24, on "The Electric Furnace in the Manufacture of Pig Iron and Pig Steel." Since his last address before the Pittsburgh society, on April 18 of last year (published in full in the May, 1911, "Proceedings" of the society), Dr. Richards has visited Sweden and Shasta county, California, the two centers of interest to metallurgists in the present experiments in the use of the electric furnace in pig iron practice. Dr. Richards' lecture will be illustrated with new slides. The regular meeting of the society, scheduled for the third Tuesday of this month, has been postponed to Saturday night to accommodate Dr. Richards' other engagemnets.

Annual Banquet, Manufacturers' Association of Pittsburgh.

Plans have been perfected for the ninth annual banquet of the Manufacturers' Association of Pittsburgh, to be held at the Union Club, on the evening of February 15. The speakers will include Director Arthur A. Hammerschlag, of the Carnegie Technical Schools; Robert M. Garland, Hon. James L. Adams and others. F. R. Babcock will act as toastmaster.

The program is in charge of the entertainment committee, of which Charles J. Mesta is chairman. A very interesting evening is anticipated.

Pittsburgh Chapter, American Institute of Electrical Engineers.

L. A. Osborne, vice president of the Westinghouse Electric & Manufacturing Company, will preside as toastmaster at the annual banquet of Pittsburgh Chapter, American Institute of Electrical Engineers, on next Saturday evening at the Ft. Pitt Hotel, Pittsburgh. The speakers will be Gano Dunn, of New York, president of the American Institute of Electrical Engineers; Dr. A. A. Hamerschlag, of the Carnegie Technical Schools; Henry E. Longwell, consulting engineer with the Westinghouse Machine Company, and Attorney A. Leo Weil, of Pittsburgh.

Pittsburgh Electrical Boosters.

At last week's session of the Pittsburgh Electrical Boosters' Club at the Nixon restaurant, Henry Harris, master controller, was the toastmaster. Responses were made by William A. Donkin, manager of the Pittsburgh Industrial Commission, and R. J. Daly, superintendent of the Bureau of Electricity of Pittsburgh. The nominating committee for the election on March 4 was appointed.

Manufacturers and Contractors' Club of Pittsburgh.

At the regular meeting of the Manufacturers and Contractors' Club, in the Lewis building, February 5, the attention of members was called to a law to become effective in 1912, exempting machinery from taxation, and it was suggested that this law be used as an inducement to have manufacturers locate in the Pittsburgh district.

Reports were presented of plans being prepared for the erection of a new office building by the Union Switch & Signal Company, and a new office building by the East End Savings and Trust Company.

C. Phillips Hill, of the Doubleday-Hill Electric Company, talked to the members on the "Comparative Values of the Nicaragua and the Panama Canal Routes." He said: "I am interested in the Nicaragua route, as I was engaged as an engineer for two years on that proposition, while the work of building a canal was in progress."

The speaker described Central America, its climate and inhabitants, and reviewed the history of the efforts made by the French to build a canal at Panama and of the American to construct a canal at Nicaragua with private capital, and the unsuccessful efforts made to have the United States government guarantee the bonds of the canal company after $10,000,000 had been invested in the enterprise, and it had to be abandoned owing to lack of funds to carry on the work.

"The Nicaragua route had a navigable water route almost to the Pacific" he said, "and the elevation of the mountain range, 150 feet, is the lowest between Alaska and Patagonia. This route would be 700 miles shorter between points on the Atlantic and Pacific coasts of the United States, but the Nicaragua canal route would be 186 miles long, requiring 33 hours' time against 49 miles by the Panama route requiring 11 hours. This difference in the length of the two canals would practically equalize a saving in time or fuel consumption by using the Nicaragua route.

"Both routes were considered in 1825 and Americans bought the right in 1850 to construct a canal, but were unable to obtain support from the government. The work of constructing the canal with private capital was commenced in 1889 with a view of having the government guarantee a bond issue. In that year Congress took up the question seriously but members from the central west, who could see no advantage to their particular section of the country, opposed the measure of giving aid so strenuously that Senator Morgan, of Alabama, and his allies, who advocated guaranteeing the bonds, were defeated.

"The success of DeLessep in the construction of the Suez canal was the cause of the French attempting to build a similar canal at Panama and the work was started in 1881. Through bad management slow progress was made and at the end of six years $369,000,000 had been expended and but six miles of the canal had been completed. In 1889 the money gave out and the work was abandoned.

"The importance of having a canal was recognized during the Spanish war and the cruise of the Oregon around Cape Horn brought the matter to a focus. The difficulty of guarding our coast line with the naval force divided in time of war made it apparent that a canal was a necessity. The people insisted that we build a canal and control it. Roosevelt appointed a committee to investigate the relative merits of the two canal routes. The American owners of the Nicaragua route wanted $100,000,000 for their rights and the work they had done. The French wanted $150,000,000 for the Panama route but they finally compromised on $40,000,000 and other considerations, and the Panama route was decided upon. The Columbian government saw an occasion for holding up the United States and asked $200,000,000 for the canal zone, which the government thought it had bought and paid for, but a revolution started, Panama established an independent government and sold the canal zone to the United States for $10,000,000.

"The work of building the canal is progressing satisfactorily and it will be completed in 1915. It will largely increase our commerce with other nations and California expects it to cut present freight rates from the east in half. In my opinion it will be the cause of a second canal being constructed as it is very probable that private capital or a European power will later construct a canal at Nicaragua."

Form J. & L. Export Company.

The Jones & Laughlin Steel Company has organized a subsidiary concern for the conduct of its export trade, and will apply for a charter for the Jones & Laughlin Steel Products Company, which will handle the foreign trade of the parent corporation independently of the domestic business. Application for the charter will be made to the governor of Pennsylvania February 26 next by

John L. Haines, Thomas Anderson, Frederick W. Ochsenhirt, Jr., George A. Mason and William J. Creighton, all of the Jones & Laughlin Steel Company.

RECENT PATENTS

The following patents, granted to January 30, are reported expressly for the INDUSTRIAL WORLD, by Siggers & Siggers, patent attorneys, Suite 30, National Union building, Washington, D. C.:

1,015,811.—Thomas H. Mack, of Balboa, Canal Zone, improvements in cone-center for lathes. This invention relates to a turning lathe of the class in which a cone center is applied to the center pin, its object being to provide that a single cone may operate on many different-sized lathes; and to furnish a cone center that is simple in construction and operation. There are in combination, a cone center, having a central cylindrical bore open at one end, and having a conical bore at the other end, with an annular recess at the open end; a bushing ring in this recess; set screws, and a center pin adapted to fit the conical bore.

1,015,863 — Federico Werth, Milan, Italy, improvements in apparatus for galvanizing metal tubes, rods, and the like. This invention relates to the electro-galvanizing of metal tubes, etc.

1,016,120—Harry Ainsworth, Moline, Ill., improvements in machine for punching holes in metal, assigned to Williams, White & Company, of Illinois. This invention relates to machines for punching holes in steel plates or bars or other shapes, and more especially to metal punching machines having a number of sets of dies and punches arranged in two or more spaced-apart rows. There are a plurality of spaced-apart rows of dies and punches; a reciprocating ram or head carrying and operating the punches in both rows, and an unelastic stripper or hold-down bar, having means for holding the work against the withdrawal of both rows of punches.

Mining Practice Patents.

Mine car wheel, John S. Skelly, Monongahela, Pa; No. 1,015,351.

Dust guard for car axle-boxes, Harry C. Gamage, New York, N. Y., assignor to D. P. Co.; No. 1,015,551.

Coke oven door, Raffaelo, Lucia, Uniontown, Pa.; No. 1,015,696.

Excavating machine, Frederick Sommers, Chicago, Ill., assignor of two-eights to Alexander Raczkowski, Chicago, Ill.; No. 1,015,850.

Regenerative coke oven, Jean G. Kros, Essen-Ruhr, Germany; No. 1,015,964.

PERSONAL

The Best Manufacturing Company announces that Howard W. Evans, formerly with the selling department of the Crane Company, Chicago, has been made general manager of sales of the of the Best Company, with headquarters at Oakmont. Mr. Evans is known as a specialist in piping materials for power plants.

V V

Cadwallader Evans, Jr., of Pittsburgh, superintendent of power for the H. W. Oliver Estate, Pittsburgh, left last week for Pictou, Nova Scotia, to take the superintendency of the mines and plant of the Arcadia Coal Company, at Pictou Harbor. Mr. Evans will take his family with him.

V V

L. P. Suter, for the past two years, Pittsburgh representative of the "Iron Trade Review," Cleveland, left Pittsburgh last week to take a position with the Marks Manufacturing Company, of Chicago, with headquarters at Toledo, O. He is succeeded in Pittsburgh by Fred C. Wilkes, long identified with the editorial staffs of the Pittsburgh daily newspapers, and most favorably known for his work in the industrial news field.

V V

E. P. Post, assistant in chemical department of the Carnegie Technical Schools, Pittsburgh, has been appointed chemist of the Enameled Pipe & Engineering Company, Elyria, Ohio.

V V

L. O. Howard, formerly a member of the faculty of Case School of Applied Science, Cleveland, Ohio, has gone to Green River, Utah, to take charge of operations of a company which is undertaking the development of vanadium deposits in that district.

V V

R. A. Sloan and B. E. Basler, of the Cambria Steel Company, Johnstown, Pa., were among the out-of-town visitors in attendance at the meeting of the Pittsburgh Foundrymens' Association in the Oliver building, Pittsburgh, Monday evening, February 5.

V V

Charles R. Hamilton, advertising manager of the National Tube Company, has been confined to his home for 11 weeks, seriously ill. Slight improvement is reported in his condition.

V V

H. E. Sheldon, president of the Allegheny Steel Company, who has filled the dual office of president and general manager, has resigned the latter office to give more time to his executive duties. W. Lester Walker succeeded Mr. Sheldon, effective February 5, as general manager. Mr. Sheldon has been in charge of the plant at Brackenridge for 11 years.

REVIEWS

METAL STATISTICS.—C. S. J. Trench and B. E. V. Luty, editors; American Mutal Market Company, New York, publishers. This handy little volume of statistics pertaining to the iron and steel and metal trades has become so familiar that extended reference to its scope and character is unnecessary. The new issue, which came from the press last week, marks the work's fifth annual appearance and shows a continuance of the growth in number of pages that has marked its predecessors. We hope this growth, which has now made the volume one of very substantial size, will never tempt the publishers to enlarge the size of page, as the book as it stands fits both the bocket and the pigeon hole, and the editors have shown their ability to arrange upon the present sized page all the statistics which the average man in the trade is likely to require in daily work.

Through the use of this book in the past few years the trade has learned that its figures are to be trusted, being compiled with great care. For coke, ferromanganese, pig iron, billets, various finished steel products and the metals in their various markets monthly average prices are given for several years back, while annual averages carry the statistics for many years back. The statistics of production are equally full, and in the metals there are also statistics of stocks, visible supply, etc.—in fact, all the statistics in these lines of which the trade has ever made use at all. There are also statistics of the steam railroads (from Poor), statistics of the United States Steel Corporation, on iron and steel exports, etc. One of the new features in the present edition is a table of list prices of wrought pipe, which makes the table of pipe discounts since April, 1901, particularly useful.

RECORDING INSTRUMENTS.—The Lexington Instrument works, of Lexington, O., has issued a bulletin describing the Smith Recording Gas Calorimeter. This new instrument in the gas power plant and gas furnace field is meeting with very remarkable success. Several of the instruments have been installed for the Steel Corporation, and a partial list of users includes the Bureau of Mines, Pittsburgh station; the Dominion fuel testing plant at Ottawa; Westinghouse Machine. Bethlehem Steel, Illinois Steel, International Harvester, etc. The Bulletin emphasizes the automatic features of the calorimeter.

FEDERAL GOVERNMENT FUMES OVER "LOST DOCUMENTS" IN WIRE POOL CASES.

IN United States Court at Trenton, on February 6, Judge George Gray, of the United States Circuit Court granted an injunction restraining the United States Steel Corporation from mutilating or destroying any documents pertaining to the dissolution suit which the Department of Justice has brought against the United States Steel Corporation.

In its petition the government charges that James A. Farrell, now president of the United States Steel Corporation, not only was cognizant of unlawful pooling arrangements under the leadership of the American Steel & Wire Company, but aided and abetted the unlawful practices.

The government charges that an officer of one of the United States Steel Corporation's subsidiary companies has destroyed a trunkful of documents of vital importance to the dissolution suit which the Department of Justice has brought against the steel trust. The government charges that there is ground to fear that other important documents having a bearing on the prosecution of the case against the steel trust will be made away with, and the government petitions for an injunction restraining the steel corporation and its subsidiaries from mutilating or destroying any such documents.

"Officers Not Yet Indicted."

The petition in the case leaves the inference that the indictment of some officers of the United States Steel Corporation and its subsidiaries is imminent in connection with the so-called steel wire pools in which a large number of indictments already has been returned.

In speaking of the alleged destruction of documents the government's petition says:

"The danger of such destruction is especially imminent because there are officers of the United States Steel Corporation and its subsidiaries who have not yet been indicted for the practices which said papers tend to show them guilty, to wit, of having been involved in the operation of the aforesaid unlawful associations, and also because none of said defendant companies has yet been indicted in respect thereto."

The petition charges in regard to the so-called pooling agreements under the lead of the American Steel & Wire Company, of New Jersey. It is charged that the members of these pooling agreements contributed and distributed money to influence legislation; that at times they suspended the rules of the association in order that an obnoxious competitor might be undersold and destroyed.

Many of these important facts were shown, it is contended, in a trunkful of papers which the American Steel & Wire Company produced under subpoena from the United States district attorney in New York. This trunkful consisted of thousand of documents, chiefly the correspondence between Edwin E. Jackson, superviser of the so-called steel association, and the officers of the American Steel & Wire Company. It also contained circular letters issued by Jackson, it is alleged, showing in detail the workings of the pool and memoranda written by Frank Baackes, vice president of the American Steel & Wire Company, or some other officer of that company.

This is the "trunkful of documents" the government alleges has been destroyed.

Chairman Gary's Explanation.

On February 7, Chairman Gary of the Steel Corporation gave out a statement in explanation of the "disappearnce" of the papers in question. After expressing his regret that the government, "thought it necessary or desirable," to bring its injunction suit restraining the corporation or its subsidiary from destroying evidence, Judge Gary said:

"I had never heard of the destruction of these papers until yesterday and upon inquiry I learn that the circumstances were as follows:

"In the spring of 1911, the New York Federal grand jury, under the direction of District Attorney Wise, began an investigation into the Jackson wire pools.

"During the course of this investigation a subpoena was issued directing the wire company to produce all letters and papers bearing upon the transactions under inquiry. The officers of the wire company complied with the subpoena by gathering together from their files all the papers called for. They were numerous and filled a large trunk.

"One of the officers brought the trunk full of papers from Worcester, Mass., where they were assembled, to the grand jury in New York. Instead of being retained, in accordance with the usual custom, in the custody of the officer producing them during the recess of the grand jury, these papers wer turned over to the district attorney at his request in order that he and his assistants might have opportunity to examine them.

"As I am informed, this examination was made and the papers were catalogued and their contents noted. Upon the examination being completed, and upon the day the indictments were filed the trunk full of papers was returned to Mr. MacVeagh (Charles MacVeagh), general solicitor of the corporation, in response to his letter referred to in the petition.

"The indictments were all disposed of by pleas of nolo contendere and the papers were never called for again by the district attorney. The trunk remained in the personal charge of Mr. MacVeagh during all of July and until the 25th of August, when he left on a two months' vacation. During the absence of Mr. MacVeagh, Mr. Bolling, assistant general solicitor, was in charge of the office.

"He had been absent in Europe during the month of July and part of August. At the end of September the offices of Mr. MacVeagh and Mr. Bolling were moved from the seventeenth to the sixteenth floor of No. 71 Broadway. Mr. Bolling then noticed the trunk in one of the offices and directed that inquiry be made at the offices of the American Steel & Wire Company, No. 30 Church street, New York city, to ascertain if the trunk could not be stored there. Upon hearing that it could, he directed its removal and it was accordingly removed to the offices of the wire company on or about September 28, 1911. This was done without the knowledge of Mr. MacVeagh.

"When Mr. Cotton of the department of justice applied about the end of January for leave to inspect the contents of the trunk, Mr. Bolling made inquiry at the office of the wire company in New York and learned that shortly after the trunk was received at that office it was forwarded by direction of Mr. Baackes to the offices of the wire company at Worcester, Mass., from which it had been originally sent.

"Further inquiry developed that after its arrival at Worcester, its contents were destroyed by order of Mr. Baackes. Mr. Baackes reports that when he ordered the contents destroyed, he supposed that all the prosecutions growing out of the wire pools were at an end and that the papers were no longer needed for any purpose."

SCHWAB ON THE NEW TARIFF.

C. M. Schwab, as president of the Bethlehem Steel Corporation appeared before the Senate Finance Committee February 8, to protest against the steel schedules of the Underwood bill. Mr. Schwab's examination was replete with "human interest" incidents. He refused to take issue with Mr. Carnegie on the need of a protective tariff, saying he would not discuss the opinion of a man "who has been so near and dear to me as Mr. Carnegie."

"After all my work and the investment of my fortune," continued Mr. Schwab,

"I never have taken a penny out of the industry and have never paid a dividend,' and if the proposed tariff is to be the law, I repeat that I shall cash in. I haven't made sufficient profit to feel justified in taking money out of the industry," he said.

"What is your salary?" asked Senator Stone.

"Oh, I haven't any," replied the witness laughingly. "I don't mind telling you why I am in this work. I don't need the income. I have no heirs, no children to leave anything to, I want to build up a successful enterprise; but I want to say that if the House bill passes I shall drop it."

Mr. Schwab admitted that he got less for the steel exported than for that sold here.

"At times we even sell abroad at a loss," he said, "because the average cost of a large production is less than that of a small production; it is necessary to maintain the output to keep the machines going all the time."

Mr. Schwab said that pig iron could be made in China for $7.50 per ton, and that he was importing iron from there for his San Francisco works rather than ship from Bethlehem.

Steel rails cost in this country from $22 to $23 per ton, and in Germany about $18 or $19. Mr. Schwab defended the seven days a week system of work in the steel industry, saying it was the system throughout the world, and that a change could not be made by any one manufacturer. He agreed with members of the committee that there should be a change and expressed interest in the experiments now in progress to that end.

THIS WEEK'S COVER ILLUSTRATION: THE MEADOW STREET BRIDGE, PITTSBURGH.

THE cover illustration on this week's issue of the INDUSTRIAL WORLD shows the completed span of the Meadow street reinforced concrete arch bridge at Pittsburgh—the second largest concrete span in the world. The building of this structure, which extended over two years, attracted much attention from the engineering fraternity, and pictures of the bridge swathed in its falsework and concrete forms are familiar to most readers of the daily and the technical press.

The length of the span is 209 feet. The bridge has satisfactorily stood every test. The work of erection was superintended by Norman S. Sprague, C. E., superintendent of the bureau of construction of the city of Pittsburgh. The entire bridge is 454 feet in length, with 30-foot roadway and two 10-foot sidewalks. Maximum clear height at the center of the span is 78 feet.

AGITATION OVER THE MACHINE TOOL TARIFF.

MACHINE TOOL interests of the country are to have a hearing on the machine tools schedules in the Underwood tariff bill. The Cincinnati machine tool manufacturers, whose committee was in Washington while the Underwood bill was pending in the house, were successful in getting the assurance of being allowed a hearing before the Senate Committee on Finance, when they will present their case. It was largely due to the work which the Cincinnati men did that the Senate did not direct that the Finance Committee report the steel bill within a specified time.

An effort was made in the Senate by Senator Reed, of Missouri, to refer the measure to the Finance Committee, with instructions to report it within 20 days. Senator Penrose, the chairman of the of the committee, protested that there had been a demand from many manufacturers to be heard, and said that 20 days was altogether too short a time in which to give them an opportunity to present their claims. Senator Reed allowed the matter to go over for the time being, because the Senate had agreed to vote on the children's bureau bill, and when the subject was taken up later he relented entirely and permitted the steel bill to go to the Finance Committee without any instructions as to when it should return it to the Senate.

In the meantime the Cincinnati delegation had labored with Senator Cummins and some of his insurgent colleagues who are in sympathy with the bill, and they also saw Senators Penrose and Burton, of Ohio, as well as several Democrats who have been known to have some leaning toward protection.

Hearing at an Early Day.

The Senate Committee on February 2 set last Tuesday as the day on which to hear the machine tool interests. In view of the fact that many of those who want to submit arguments on other schedules of the bill will come from the Rocky Mountain section and the Pacific Coast, it was thought best to inform the machine tool men that they might have their innings first, particularly as they indicated much interest in the matter when they were here, and are believed to be prepared with their evidence to show that the present duty of 30 per cent should not be disturbed.

Last Monday the Senate Committee agreed to allow the machine tool men to prepare their case. They will be heard to-morrow (February 13). Representative Nicholas Longworth, of Cincinnati, will appear with the Cincinnati delegation and present them.

A Meeting in New York.

A meeting of Eastern manufacturers, dealers in machinery, was held February 6 in the office of the Prentiss Tool Supply Company, 149 Broadway, New York. Henry Prentiss is the first vice president of the National Supply & Machinery Dealers' Association. The effect of the placing of machine tools on the free list was discussed and declared to be a most unjust proposal. The opinion was expressed that the proposed metal schedule will be amended in this particular, when its unfairness is made clear to the Finance Committee of the Senate, at to-morrow's hearing. The dealers decided to bring the question immediately to the attention of individual members of Congress, especially Senators, by means of letters, and to co-operate in every way with the manufacturers.

GROWING AUTO EXPORTS.

Figures by the Treasury Department.

Over $20,000,000 worth of automobiles were exported from the United States in the calendar year 1911, or 20 times as much as a decade ago. The exports to foreign countries last year, including tires and other parts, were valued at $21,-36,661 and the shipments to our own non-contiguous territories, Hawaii, Porto Rico and Alaska $1,843,165. Ten years ago the exports to foreign countries were but $1,069,782 in value; by 1906 they had grown to $4,409,186; by 1910, to $14,030,-226, and in the calendar year just ended had risen to $21,636,661, this increase of $20,000,000 in the exports of American made automobiles within a single decade being one of the most notable achievements of our foreign commerce in recent years.

Meantime imports of automobiles into the United States show a decreasing tendency. In 1906, according to the published reports of the Bureau of Statistics, Department of Commerce and Labor, imports and exports of automobiles were of about equal value, imports into the United States in that year being $4,910,-208 and exports therefrom, $4,409,186. The following year witnessed a shifting of the balance of trade in automobiles from the import to the export side, since which time the excess of exports has steadily increased until in 1911 it was $19,190,413, imports in that year having been but $2,446,248 and exports $21,-636,661.

The course of our trade in imports and exports of automobiles is illustrated by

the following figures covering quadrennial years from 1902 to 1911.

Years	Imports	Exports	Shipments to Noncontiguous Territories
1902...	*$ 550,000	$ 1,069,782	$ 34,794
1906...	4,910,208	4,409,186	185,870
1910...	2,737,208	14,030,226	1,458,650
1911...	2,446,248	21,636,661	1,843,165

* Fiscal year imports for consumption.

Most of the automobiles exported from the United States go to British territory. The value exported to Canada in 1902 was $37,439, while in 1910 it had increased to $4,383,487 and in 1911 to $7,180,547, or one-third the entire exports of this class of manufactures. To the United Kingdom the total last year was $3,700,095, against $948,995 in 1906 and $671,553 in 1902.

INDUSTRIAL FIRES.

Moline, Ill.—Plant of Barnard & Lees Manuafcturing Company, builders of flour milling machinery, burned February 6; loss $500,000. Power plant and machine shop a total loss.

* * *

Clarksburg, W Va.—Plant of Clarksburg Foundry & Castings Company, Balitmore street, gutted February 1. Loss $3,000; insured. Plant, owned by a local stock company, will be rebuilt.

* * *

Moline, Ill.—Plant of Barnard & Lees, builders of flour milling machinery, damaged $500,000 February 4. Insured; will rebuild.

* * *

Beaver Falls, Pa.—Main building of Beaver Falls Planing Mill Company, destroyed on February 5; loss, $65,000. The machinery and finished lumber were entirely destroyed.

* * *

Newark, N. J.—Explosion in japanning department of Westinghouse Electric & Manufacturing Company's plant here damaged plant and machinery, February 6.

Expenditures by Wabash.

Plans have been completed by the receivers of the Wabash road for the expenditure of $7,000,000 for betterments throughout the systems. An order recently was entered in the Federal Court at St. Louis authorizing them to sell $10,000,000 of receivers' certificates, and the money, it is expected, will be available in a week or 10 days.

The expenditures will include $3,000,000 for new equipment, $3,000,000 for double track work and $1,000,000 for miscellaneous improvements.

According to President Delano 10 new passenger locomotives and an equal number of freight and switching locomotives will be ordered, in addition to 25 locomotives purchased some time ago. Orders also will be given for 3,000 freight cars and 20 passenger cars.

Double tracking will cover 185 miles, chiefly between St. Louis and Chicago. Hereafter all new rails laid between St. Louis and Chicago on the Wabash line will be the 100-pound type and on other parts of the system 90-pound rails will be laid on the renewal work.

Reading Orders Ice Cars.

To comply with its promise to the State Railroad Commission the Philadelphia & Reading Railway is remodeling 25 baggage cars into refrigerator cars for the transportation of milk after April 1.

The Pennsylvania Railroad and the Baltimore & Ohio readily furnished refrigerator cars last summer for such service, but the Philadelphia & Reading had to be forced to the issue by protest to the commission.

LARGEST AM YET.

Montreal Is to Have a Million-Horsepower Project.

Scheme has been planned by the recently incorporated Eastern Canada Power Company, which proposes to genate 1,000,000 horsepower within 25 miles of Montreal and which contemplates the harnessing of the water which now dashes untrameled through the Coteau Cascade, Split Rock, and Cedar Rapids from Lake St. Francis to Lake St. Louis on the St. Lawrence River.

The scheme will mean the entire obliteration of the rapids mentioned. The swift and picturesque Coteau and Cedar Rapids will be turned into a still-flowing lake behind the immense retaining walls of the company's dams. The island in the river throughout that stretch of nearly 12 miles will cease to be beautiful; the water which raced through the Cedars will be diverted into the Ottawa, and the rapids left dry and uninteresting.

The project has not yet proceeded beyond a proposal. The authorization of the government must be obtained before work can be commenced. However, the new government has already approved of the plans of the Cedar Rapids Power Company, of which D. Lorne McGibbon, one of the Montreal's greatest capitalists, is at the head. This concern would be wiped out by the project of the Eastern Canada Power Company, but rumor has it that Mr. Gibbon has been won over to the side of the new company, so that any rights granted to him in the matter of the Cedar Rapids scheme would not be relinquished.

Try a Want or For Sale ad in the Industrial World.

OHIO RIVER SLACKWATER.

Work on Unfinished Dams Along the River Is to Be Pushed.

With 12 of the 48 dams on the Ohio from the headwaters to the mouth completed and 16 others under construction, the government engineers are completing their work even faster than was generally expected. During the coming summer several dams will be completed on the first 100 miles of river, which will aid materially in making the river navigable during the low water stage.

Dams Nos. 1, 2, 3, 4, 5 and 6 have been completed. These dams are in Pittsburgh district. Major H. W. Alstaetter, who has charge of the Wheeling district, is in charge of the work on the upper river. Dam No. 7 has not been started, but No. 8 has been completed. Plans have been prepared, but work has not yet been started on dams 9 and 10. No. 11, at Wellsburg, has been completed, while No. 12, at Sisters island, is under course of construction. No. 13, at McMechen, is in operation. Arrangements are being made to start the work on Nos. 14 and 15, near Moundsville, while contractors are now working on the dam at New Martinsville.

Dam No. 18 is in operation. Plans have been completed for 20, 21, 22, 23, 24 and 25, but work has not yet been started. No. 26 is about completed as is 27. Work on the other dams will be started just as soon as congress makes the appropriations.

Trying Out New Style Car.

[Brooklyn, N. Y., Times.]

The skeleton of a new style of car that will be used by the B. R. T. in the future created considerable curiousty in the vicinity of the Williamsburgh Bridge plaza and lower Broadway, where it was being drawn over the various switches and curves. The car is several inches larger than the old type, and it was being tried for the purpose of ascertaining whether or not its size would permit its use on the Brooklyn tracks.

Build Ohio Trolley.

Colonel A. E. Cox, promoter of Huntington, W. Va., announced that the Pittsburgh and Cincinnati trolley line would be built. Governor James E. Campbell, of Columbus, represents English capitalists who are financing the road. Several Cincinnati roads have been taken over and all rights of way have been secured, it is announced.

Trolley Construction in West Virginia.

The Fairmont & Clarksburg Traction Company will immediately start the preliminary work for the construction of the line from Clarksburg to Weston, W. Va.

"FROM IRON ORE TO FINISHED PRODUCT": IN SUMMARY FORM

A Study, By Eliot A. Kebler, Resident Agent of M. A. Hanna & Company.

ELIOT A. KEBLER, Pittsburgh resident manager for M. A. Hanna & Company, appeared as speaker at last week's meeting of the Pittsburgh Foundrymen's Association, on short notice. William H. Wood, who was to have presented a discussion on "Brass" at the meeting, in the rooms of the Engineers' Society, February 5, was unable to be present and at the solicitation of members of the entertainment committee Mr. Kebler revived a talk he had given recently before a class at the Carnegie Technical Schools.

Mr. Kebler discussed "From Iron Ore to Finished Product." He presented a map on which was designated the location of the principal iron ore deposits in the United States and Canada and described the area, depth of vein and methods of mining and marketing the several deposits. The speaker's description of the methods of marketing the product of the Mesaba district was particularly interesting.

A description of a blast furnace, its operation, including the application of hot blast stoves, and the manufacture of pig iron of various kinds, was followed by a chart giving the location of the furnace plants on the continent.

The conversion of pig iron into castings, wrought iron and steel, was followed through each of the various processes, illustrated with drawings of puddling, heating, open hearth and electric furnaces, Bessemer converters, squeezers, rolls and other equipment necessary to produce the finished product.

Samples of castings including malleable, iron and steel; finished product including high-speed steel, seamless tubing, wire, sheet and plate were shown and described. Mr. Kebler then presented his subject in summarized form, as follows:

IRON ORE contains iron and oxygen and impurities.

IRON ORE smelted in blast furnace, removes oxygen and part of impurities, and adds carbon—makes **PIG IRON.**

FOUNDRY PIG IRON melted in cupola and cast, makes **IRON CASTINGS.**

IRON CASTINGS made from Malleable pig iron and heated in scale, make **MALLEABLE CASTINGS.**

GREY FORGE PIG IRON melted in a puddling furnace, then balled squeezed and rolled, makes **MUCK BAR**

MUCK BAR or wrought scrap cut into short lengths, piled, heated and roll-

[Continued on next page.]

TYPICAL ANALYSES AND SPECIFICATIONS.

Lake Superior IRON ORES

(Natural Condition) BRAND	LOSS ON IGNITION	MOISTURE	IRON	SILICA	SULPHUR	PHOS.	MANGANESE
American (Marquette)	1.68	2.05	56.42	12.09	.011	.039	.04
Montrose (Gogebic)	2.79	10.92	54.29	5.88	.029	.069	.37
Dover (Mesaba)	4.26	13.37	51.89	5.03	.009	.068	.54
Republic Basic Lump (used for open hearth fix)	none	.82	65.86	2.34	.012	.093	.06
Beaver (puddling furnace fix)	10.71	4.12	56.27	2.69	.028	.072	.38

PIG IRON	SILICON	SULPHUR	PHOS.	MANG.
High Phosphorus	1.75 to 2.50	.05 & under	over 1.00	.35 to .70
Valley No. 2 Foundry	1.75 to 2.25	.05 & under	.40 to .60	.50 to .80
Valley Grey Forge	.75 and over	over .05	.40 to .60	.50 to .80
Strong Fdry & Car Wheel	.75 to 1.50	.05 & under	.30 & under	.50 to .80
Basic (Chill Cast)	not over 1.00	.05 & under		
Malleable	as desired	.05 & under	.20 & under	not ov'r .80
Bessemer	1.00 to 2.00	.05 & under	.10 & under	
Low Phosphorus	1.00 to 2.00	.035 & under	.035 & under	

IRON CASTINGS	TOTAL CARBON	SILICON	SULPHUR	PHOS	MANG.
Light	3.40	2.75	.075	.75	.40
Medium	3.50	1.75	.080	.55	.60
Semi Steel	3.30	1.30	.075	.40	.45
Malleable	2.50	.75	.070	.19	.25

WROUGHT IRON.	CARBON	SILICON	SULPHUR	PHOS.	MANG.
Muck Bar	.05	.108	.025	.193	not over .10
Skelp	.10	.040	.050	.055	not over .10

STEEL BILLETS AND SHEET BARS	CARBON	SULPHUR	PHOS.	MANG.
Bessemer	.08 to .12	.08 or less	.09 to .12	.35 to .50
Acid O. H.	.08 to .12	.06 or less	.08 or less	.35 to .50
Basic O. H. (soft)	.08 to .12	.05 or less	.05 or less	.30 to .45
Basic O. H. (phos added)	.08 to .12	.05 or less	.08	.40 to .50
Am. Ingot Iron	.02	.02	.005	trace

TOOL STEEL.	TUN'N	CHR'M	CARB.	SULPHUR	PHOS.	SIL'N	VAND'M
Carbon Steel			1.10		.015	.20	
High-Speed Steel	18.00	3.50	.55	0.12 or less	trace	trace	1.00

Chemical specification ASSN. of AMER. STEEL MFRS.

RAILS.	CARBON	SILICON	PHOSPHORUS	MANGANESE
Bessemer	.35 to .55	not over .20	not over .10	.70 to 1.14
Open Hearth	.46 to .75	not over .20	not over .04	.60 to .90

Extracts from Specifications, AMER. SOC.. for TESTING MATERIALS.

STEEL CASTINGS	MINIMUM PHYSICAL REQUIREMENTS: Tensile lbs. per sq. in.	Yield Point lbs. per sq. in.	Per Cent Elongation in 2 inches	Per Cent Contraction in Area	MAXIMUM: Carbon	Sulphur	Phosphorus
Ordinary Castings	None required				.04	.05	.08
Tested Castings (hard)	85,000	38,250	15	20		.05	.05
Tested Castings (medium)	70,000	31,500	18	25		.05	.05
Tested Castings (soft)	60,000	27,000	22	30		.05	.05

STRUCTURAL STEEL FOR BUILDINGS.	STRUCTURAL STEEL	RIVET STEEL OPEN HEARTH
Phosphorus, maximum, Bessemer	.10 per cent.	
Phosphorus, maximum, Open Hearth	.06 per cent.	.06 per cent.
Ultimate tensile strength, pounds per square inch	55,000-65,000	48,000-58,000
Yield point	½ Ult. tens. str.	½ Ult. tens. str.
Elongation, minimum, per cent, in 8 inches	1,400,000 / Ult. tens. str.	1,400,000 / Ult. tens. str.
Character of fracture	Silky	Silky
Cold bend without fracture	180° to diameter of 1 thickness	180° flat

[Tables continued on following page.]

PIG IRON TO FINISHED PRODUCT

[Continued from Preceding Page.]

ed, makes **WROUGHT IRON.**

MUCK BAR treated as above and rolled into strips, makes **SKELP.**

SKELP bent into the shape of tubes and welded, makes **PIPE.**

MUCK BAR or steel melted in a crucible, with charcoal, makes carbon steel, tool steel or **CRUCIBLE STEEL.**

MUCK BAR or steel treated as above, with tungsten added to raise the temperature at which it softens, chromium to give toughness and vanadium, titanium, aluminum, or other metals to improve the quality, heated to a high, then to a lower heat, makes **HIGH SPEED STEEL.**

BESSEMER PIG IRON direct from blast furnace or melted in cupola, poured into converter, with air blown through it to burn out the impurities, makes **BESSEMER STEEL.**

PIG IRON molten, or in pig, with or without scrap, when purified in open hearth furnace, makes **OPEN HEARTH STEEL.**

LOW PHOSPHORUS PIG IRON treated as above in an acid (silica or sand) lined furnace makes **ACID O. H. STEEL.**

BASIC PIG IRON treated as above in a basic (Dolomite) lined furnace to remove phosphorus, makes **BASIC O. H. STEEL.**

BASIC O. H. STEEL with only about 1/10 of 1 per cent impurities is called by various trade names, such as Toncan metal, genuine open hearth iron, and **AMERICAN INGOT IRON.**

ALLOYS — Vanadium, manganese (over 7 per cent), titanium, or nickel steel, made by the addition of these metals, all being called **ALLOY STEELS.**

STEEL purified in an electric furnace makes **HIGH GRADE STEEL.**

STEEL is cast into ingot molds usually about 19 inches square and about six feet long, making **INGOTS.**

INGOTS are rolled into **BLOOMS OR BILLETS.**

BLOOMS are rolled into **RAILS.**

BLOOMS are rolled into **STRUCTURAL STEEL.**

INGOTS are rolled into **SLABS.**

SLABS are rolled into **PLATES.**

INGOTS are rolled into **SHEET BARS.**

SHEET BARS are rolled into **SHEETS.**

SHEETS are cold rolled and stamped into **FORMS.**

SHEET BARS are rolled into **BLACK SHEET**

BLACK SHEETS coated with spelter (zinc) make **GALVANIZED SHEETS.**

BLACK SHEETS cold rolled, annealed and coated with tin make **TIN PLATE.**

BLACK SHEETS cold rolled, annealed and coated with lead and tin make **TERNE PLATE.**

INGOTS are rolled into **BILLETS.**

BILLETS are rolled into **BARS AND SMALL SHAPES.**

BILLETS are pierced, rolled and drawn through dies, making **SEAMLESS TUBES.**

BILLETS are rolled into **RODS.**

RODS are drawn through dies into **WIRE.**

WIRE is made into **NAILS AND FENCING.**

RODS are headed into **RIVETS AND BOLTS.**

RODS are welded into **CHAIN.**

PIG IRON PRODUCTION FOR JANUARY.

	No. stks.	In blast	Out blast	Product'n
New York	24	13	11	118,783
New Jersey	7	0	7	.....
Pennsylvania, Eastern	58	26	32	178,154
Pennsylvania, Western	27	15	12	106,708
Pittsburgh District	53	44	9	495,099
Shenango Valley	20	13	7	177,987
Mahoning Valley	24	18	6	218,221
Ohio, Central and Northern	23	14	9	140,022
Ohio, Hocking and Hanging Rock	15	8	7	32,495
Wheeling District	14	11	3	121,561
Maryland, Virginia and Kentucky	32	10	22	45,716
Alabama	46	18	28	145,830
Tennessee, Georgia and Texas	20	6	14	22,938
Illinois, Indiana, Minnesota, Wisconsin, Missouri, Michigan, Colorado, Washington	51	31	20	314,397
*Totals for January	414	227	187	2,057,911
*Totals for December	414	214	200	2,043,270
†Totals for November	414	211	203	1,999,433
*Totals for October	416	214	202	2,102,147
†Totals for September	416	213	203	1,976,102
*Totals for August	418	203	215	1,926,637

*Month of 31 days; †Month of 30 days.

OPEN HEARTH BOILER PLATE & RIVET STEEL	FLANGE STEEL	FIRE BOX STEEL	EXTRA SOFT STEEL
Phosphorus shall not exceed	Acid .06 per cent Basic .04 per cent	Acid .04 per cent Basic .03 per cent	.04 per cent
Sulphur shall not exceed	.05 per cent	.04 per cent	.04 per cent
Manganese	.30 to .60 per cent	.30 to .50 per cent	.30 to .50 per cent
Ultimate tensile strength, pounds per square inch	55,000-65,000	52,000-62,000	45,000-55,000
Yield point, in pounds per square inch shall not be less than	½ Ult. tens. str. 1,500,000	½ Ult. tens. str. 1,500,000	½ Ult. tens. str. 1,500,000
Elongation per cent in 8 in. shall not be less than	Ult. tens. str.	Ult. tens. str.	Ult. tens. str. (but need not exceed 30 per cent.)
Cold bend Quench bend	180° flat.	180° flat.	180° flat.

BIRMINGHAM-PACIFIC RATES.

Southern Iron and Steel Producers Get Benefit of Freight Reduction.

The agitation by Alabama iron and steel interests for lower rates to points west bore fruit last week in the announcement of new freight tariffs from the Birmingham district to the Pacific coast, in effect March 11. The new tariff will place on an equal shipping basis to the coast with all Mississippi river points, including Memphis and Cincinnati. The reduction was given voluntarily by the railroads. Louisville & Nashville, the Frisco system, the Alabama Great Southern, the Illinois Central, the Mobile & Ohio and the Nashville, Chattanooga & St. Paul participate in the new rates.

The commodities most affected by the rate change are pig iron, cast iron pipe, coke, cotton and rail fastenings. The Frisco lines have compiled a table on the the rate changes which has been announced to shippers. According to this table the new rate on pig iron to California points is increased 8 cents a ton, while to the north Pacific points the new rate is $1.98 a ton lower. The North Pacific rate on coke is unchanged, but the California rate is increased $1.50 a ton. The table follows:

	California		North Pacific	
Commodity	New Rate	Old Rate	New Rate	Old Rate
Pig iron	$10.08	$10.00	$ 8.06	$10.04
Cast iron pipe	13.00	13.00	13.00	13.00
Coke	9.50	8.00	9.50	9.50
Rail fastenings	.65½	.80½	.67½	.80½

New corporations chartered in Ohio during January represented $8,931,000, while existing corporations in the State increased their capital $7,177,000.

NEW JAR-RAMMING MACHINE FOR LIGHT CASTINGS.

THE portable, combined jar-ramming and squeezing molding machine, shown in the accompanying illustrations is built by the Union Foundry & Machine Company, Pittsburgh, for the Lawlor Improved Jarring Molding Machine Company. This machine is adapted for making molds for light castings, and by moving aside the squeezing head the machine can be used as a plain jar-rammer for making deep molds. It can be used for jar-ramming and squeezing molds, as a plain squeezer or as a jar-ramming and stripping plate machine.

The machine is mounted on a timber foundation, resilient material being placed between the timbers to dissipate the shock. A truck mounted on four wheels encircles the foundation, which is raised and lowered through the

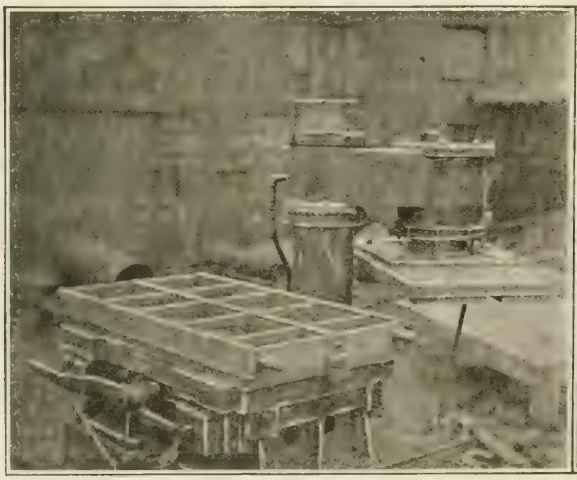

Fig. 1.—Combined jar-ramming and squeezing machine, squeezer removed.

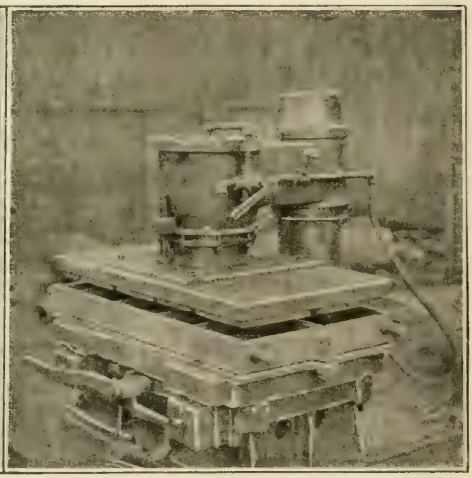

Fig. 2.—Machine with squeezing plate in position for work.

inside of the truck by a toggle-actuating lever. The machine can be operated on a track or on the foundry floor.

The jar-ramming mechanism is similar in construction to that of the plain jarring machine made by this company, the table being smaller and the lifting power less. The squeezing head consists of a double-acting air cylinder, which can be raised or lowered to conform to the depth of the flask being used. The work of butt-ramming by hand is eliminated by use of the squeezing head.

The machine illustrated is designed for making molds for two radiators at one operation. It is one of two machines to be shipped to a western radiator company. Other orders recently received by the company include several jar-ramming, squeezing, stripping plate machines for brass castings; a 54x84-inch jarring machine for castings up to 12,000 pounds for a Pittsburgh foundry, and a round machine with capacity of 12 tons for the manufacture of water pipe from 14 to 36 inches, to be installed in a western pipe casting works.

Resume at Structural Plant.

Work will be resumed at the structural iron works of the defunct Brown-Ketcham Company, at Greensburg, Pa., the plant having been transferred to the Noelke-Richards Company, of Indianapolis, by the approval of Judge Albert Rabb, referee in bankruptcy. The approval also carries with it the transfer of the Brown-Ketcham Company's Haughville (Ind.) plant.

Hugh R. Richards, president of the Noelke-Richards Company, says they will start the Greensburg plant about March 1, and the Haughville plant soon.

Injunction in Hardware Fixture Patent.

The Strause Gas Iron Company, of Philadelphia, has obtained an injunction restraining the Marion Manufacturing Company from making and selling gas-irons in imitation of the Strause company's gas-iron.

St. Louis Mercantile Club is endeavoring to make that city a trade journal center.

A PANAMA FILTER PLANT.

Simple Installation, Completed at Colon at Cost of $38,000.

[From the Panama Record.]

The new filtration plant at Aqua Clara reservoir is of a type new to the Isthmus, though it is being adopted in the States.

The raw water from the reservoir at Aqua Clara passes into a mixing box, where it receives an infusion of alum, in the proportion of 1.5 grains per gallon of raw water and is mixed by passing over submerged weirs and under weirs projected from the top of the box, on its way to the sedimentation basin. In the mixing box, which is 30 feet 6 inches long by 6 feet 4 inches wide and 5 feet deep, the water is aerated by means of compressed air, from pipes set at intervals among the weirs.

In the 300,000 gallon sedimentation basin the water rests approximately three hours, after which it is drawn off to the filter beds, of which there are four, each 17 feet square, interior measurement. On the bottom of each is a bed of sand 30 inches deep, resting on a stratum of sandstone gravel one foot thick. One hundred and twenty-eight two-inch pipes, arranged in parallel on the floor and extending the length of the tank, receive the clarified water through perforations and transmit it to a common collector pipe, from which it is passed, through a controller, to the clear water reservoir. The controller consists of a float, from which is suspended a plunger. For any designated head of water, to the level of which the float is adjusted, the

float moves the plunger in a vertical plane, opening or closing ports through which water comes from the filters to the clear water reservoir. The capacity of the clear water tank is 200,000 gallons.

Water from this reservoir is forced by means of two electrically driven pumps, each of 1,400 gallons per minute capacity, into the 400,000-gallon standpipe at Gatun, from which it is distributed by gravity. The piping is arranged so that filtered water, exclusively, is used for domestic purposes and raw water from the reservoir is furnished for all plant and equipment use. The filtered water is supplied to approximately 10,000 people, in the villages of Gatun, New Gatun and Spillway. About 2,500,000 gallons may be filtered daily.

The building for the plant was constructed wholly of reinforced concrete, including the roof, which is a slab four inches thick and weighing about 50 pounds to the square foot. It is three stories high in the central part, with wings of one story. On the upper floor are storage rooms for resolvents; the middle is the operating floor, from which all machinery can be easily controlled; and on the ground floor are the filter beds, with the regulating devices. A bacteriological laboratory was constructed adjacent to the filter house, at a cost of $2,000. The filtration plant proper cost $38,000. It was designed and constructed by the Atlantic Division, the machinery, with the exception of rate-controllers and loss-of-head gages, having been fabricated in the States according to specifications and details furnished by the division office.

New York's Iron Ore Output.

According to "Mines and Minerals," the production of iron in New York State approximated that of 1909, when 1,015,000 tons found a market, most of which was magnetite. The production of New Jersey continued nearly up to the average, 543,000 tons.

AN ELECTRICALLY-OPERATED BASCULE BRIDGE.

By Frank C. Perkins.

CHICAGO engineers have shown much interest in the electrically-driven bascule bridge crossing the Chicago river at Bridgeport, Chicago. This bridge was constructed by the Chicago & Alton Railroad Company, to replace an old swing bridge. The span is 150 feet, the bridge crossing the river at an angle of 68½ degrees. The bridge is capable of sustaining on its double track a moving load of two locomotives weighing 192½ tons each, followed by 500 pounds per lineal foot.

The bridge is of the single leaf type with a span of 150 feet and an approach span of 64 feet. There are two electric motors of the railway type, each having a capacity of 125 horsepower, giving ample power with reserve for emergency, as it is maintained that the bridge can be opened in 55 seconds, the actual electric power required to lift and lower the structure being only seventy horsepower under normal conditions. In the bridge tender's cabin, which is located at the top of the vertical end post over the hinge of the counter weight girders, the operating series-parallel electric controller is installed. There is a specially designed contact device employed, whereby the movement of the bridge in being lowered or raised is indicated in four consecutive positions of a visible signal, consisting of a number of electric incandescent lamps.

A three-horsepower electric motor is utilized for the operation of the end lock, the electric motor being placed on a platform between the stringers and under the track.

The bridge is lifted and lowered by means of driving pinions, keyed to the roller shaft and engaging a rack mounted on the center line of each rack girder. Between the counter weight girders, the main driving gear is attached to the roller shaft, the gearing and motors being supported on longitudinal girders. The latter are connected to cross girders, attached to the counter weight girders. In this way the weight of the electric motor, girders and machinery is utilized as a part of the counter-weight, the remainder being made up by concrete placed between cast iron blocks, bolted to the webs of the girders on the outside and the counter-weight girders themselves. There are two rollers carrying each counter-weight girders, the distribution being such that the counter-weight on each side gives an equal load on each of the rollers. This bascule railroad bridge provides a clear channel 100 feet wide, measured at right angles to the general direction of navigation.

Fig. 1.—Chicago bascule bridge in closed position.

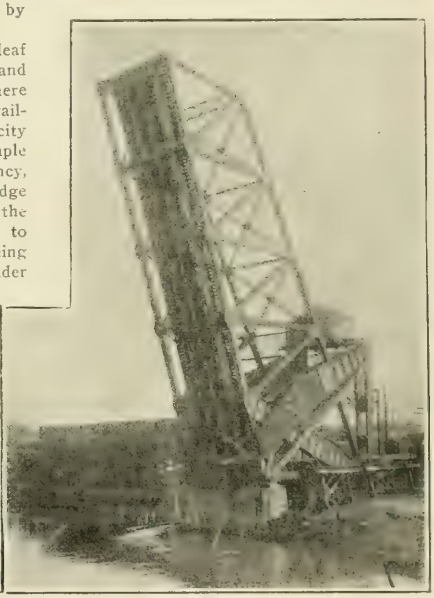

Fig. 2.—Bridge open for boats.

Cincinnati consumed 2,074,000,000 cubic feet of natural gas in January, an increase of 826,000,000 cubic feet, or 66 per cent, over January 1911. Record consumption was on month's coldest day, January 7, when it was 71,000,000 feet.

Interstate Mantel & Tile Dealers meet at Cincinnati this week.

"NO FEARS OF A GAS ENGINE NAVY"

—George Westinghouse.

INVENTOR COMPARES THE DIESEL ENGINE WITH THE MODIFIED TURBINE FOR NAVAL PURPOSES — REPORTED PLAN OF FOREIGN GOVERNMENTS HE BELIEVES WOULD BE A BACKWARD STEP.

IN AN authorized letter to the New York Times, George Westinghouse comments as follows on reported gas engine projects for marine purposes abroad:

In your London cable news of to-day you refer to the British Admiralty's information concerning an internal combustion engine of the Diesel type, to be operated by heavy cheap oils, which is about to be applied to a German war vessel, for which engine it is claimed that if the expectations of its designers are fulfilled it should give the German Navy an immense advantage in its race for supremacy against the British Navy and all other navies of the world.

Is it not possible that the British Admiralty, instead of being alarmed at the prospects of the German dreadnoughts being fitted with Diesel engines, would as a matter of fact, regard such a step as a retrograde movement of great importance to England?

It has long been known that internal combustion engines operated by oil can produce horse power when running at full load for about six-tenths of a pound of crude oil; but when operating at the low powers required for cruising, the consumption of oil per horsepower would be very greatly increased.

The excessive pressure required for the economical operation of these Diesel engines (800 pounds or more per square inch) has so far proved very difficult of control and has made the wear and tear of such engines of large size a work requiring not only a great deal of time but very heavy experimental expenditures.

From my years of study of the problem, I heartily approve of the following comments of the prominent American naval officer whom you quoted:

"The changing from steam to oil is, however, a thing that will not come in a day by any means. There are too many dangers and too many drawbacks to take chances with a new type of engine until its value is absolutely proved."

The prime reason for giving such weight to the development of the internal combustion engine is the hope of securing thereby a greater cruising radius, which would result from obtaining a horsepower for about half of the weight of fuel now required for steam engines, notwithstanding the generally recognized fact that no internal combustion engine of any known type can ever operate with the same freedom from accidents and interruptions as do modern steam engines, turbine or reciprocating.

An objection to the use of oil is the uncertainty of the supply and the certainty that as additional uses are found for petroleum products the cost thereof will constantly increase. A further disadvantage is the fact that oiling stations would be generally required throughout the world and that such stations would be much more easily destroyed than a store of coal.

While the study of internal combustion engines for marine purposes has been going on even greater attention has been given to the better utilization of steam for battleship work, and although the early applications of turbines, with their shafts directly connected to the propellers, have not met the expectations of either naval authorities or engineers, yet it is now possible, by introducing a form of reduction gear between the shaft of the turbine and the propeller shaft, to not only reduce the weight of the equivalent machinery by one-half but also to secure an economy in the use of steam greatly superior to that of the best type of either direct-connected turbines or reciprocating engines for cruising purposes.

The Navy Department has been alive to the importance of this development and has fitted the collier Neptune with turbines and reduction gears, in order to prove the practicability of the latter for large powers, and it may be said that the results obtained in the operation of these gears, coupled with the installation of a number of similar gears which have been operated for many months in land installations, have demonstrated the entire practicability of this method of propelling ships.

Although the Navy Department announced recently a decision not to apply turbines to the new battleships, owing to the superior economy of the reciprocating engines, notably those of the Delaware, especially for cruising purposes, nevertheless it is now said that the department has receded from this determination by awarding a contract to the Fore River Company for the installation of turbine engines in the dreadnought Oklahoma, notwithstanding the North Dakota, with Curtis turbines built by the same contractors, required 40 per cent. more fuel in crossing the Atlantic than was used by the reciprocating engines of the Delaware.

Although I am interested, as one of the inventors and as the manufacturer of the apparatus put in the Neptune, yet I believe I may fairly point out at this moment that it is highly important for the citizens of this country to realize the danger to our naval program of awaiting the development of an internal combustion engine for marine service, which may never materialize, and at the same time remind them that there is available a class of machinery the adoption of which will put the American navy in the very strongest possible position.

GEORGE WESTINGHOUSE.

Illinois Fights Dam Project.

The appeal of the people of the State of Illinois ex rel., Charles S. Deneen, governor, and W. H. Stead, attorney general, against the Economy Light & Power Company in error to the Supreme Court of Illinois was docketed in the United States Supreme Court last week.

The State sought an injunction in the State Circuit Court for one of the local circuits in Illinois to restrain the hydro-electric corporation from building a dam across the Desplaines river to generate power. The injunction was denied.

The State appealed to the Supreme Court of Illinois and that tribunal affirmed the judgment of the local court, refusing the injunction. The case is now before the United States Supreme Court on writ of error.

"Trackless Trolley" Bill in New York.

A new bill for "trackless trolley" roads, introduced in the New York legislature on February 6 by Senator Smalley of Somerset county, authorizes the formation of companies to operate cars with the same powers and duties as are imposed upon rail trolleys. It is said that trackless trolleys fill an important gap between rail trolleys and bus lines, and are feeders for the former rather than an opposition. It is planned to project such a line through Somerset county, from Summit to Bernardsville, N. Y.

An offer of $1,000 from J. S. Wertheimer, a junk dealer, for the wrecked machinery in the ruins of the Chamber of Commerce building, Cincinnati, was accepted last week.

Try a Want or For Sale ad in the INDUSTRIAL WORLD.

BUREAU OF MINES ON EXPLOSIVES

EXPERTS employed at the Pittsburgh testing station, United States Bureau of Mines, have contributed largely to the Bureau's latest publication, Bulletin No. 15, on the subject of explosives used in coal mines. The investigations were conducted by Clarence Hall, W. O. Snelling and S. P. Howell and the purpose was to determine which explosives are the most suitable for use in coal mines and the precise conditions under which they may be used with the greatest safety.

The general introduction to the bulletin, written by Charles E. Munroe, consulting engineer of the bureau, states: "The United States government does not compel nor prevent the use of any explosives or prescribe the conditions of use. It only advises the public as to the character of explosives and as to the manner in which they should be used. It is, therefore, gratifying to state that the manufacturers of explosives in this country co-operated so promptly and so cordially in the endeavor to protect the lives and persons of those engaged in mining coal that by January 1, 1910, there had been received at the Pittsburgh testing station of the Bureau 51 applications for the testing of 134 explosives. During that year 54 of the explosives were tested and 36 of these passed the tests required to place them on the list of permissible explosives.

The bulletin describes the method used in testing explosives and defines what a permissible explosive is. On this subject W. O. Snelling says:

Methods of Testing.

"In explosives for use in the open air, such as, for example, quarrying or railroad excavation, strength and efficiency in removing rock are the qualities that are most important, and usually are the only ones that need consideration in the selection of a suitable explosive. Explosives that are to be used in tunneling must not only possess strength and efficiency but also be of such composition that upon exploding they will not give off large quantities of poisonous or offensive gases. In explosives intended for use in coal mines, a further property is most important. Besides possessing the qualities of strength, efficiency in breaking down coal, and freedom from poisonous explosion products, the explosive should be of such nature as not readily to ignite explosive mixtures of gas or coal dust.

Explosive Coal Dust.

"The underlying causes for one explosive being safer than another in the presence of explosive mixtures of gas or coal dust have been investigated during the past few years. The many thousands of lives lost in coal-mine disasters have shown the necessity of such investigations, and have stimulated to a marked extent researches in regard to the preparation of explosives suitable for use in coal mining. It has been found that every known explosive, if fired in a sufficiently large charge, will cause the ignition of an explosive gas mixture, but explosives have been found to differ widely in regard to the amount that can be fired without causing such ignition. Ordinary black blasting powder, for example, will cause the ignition of explosive gas mixtures very readily, as little as 25 grams somewhat less than an ounce) invariably serving to bring about this result. Certain other explosives, in quantities as great as 1,000 grams (2 1/5 pounds), after repeated trials, under conditions exactly similar to those used in testing black powder, have invariably failed to cause ignition of the explosive gas mixtures.

"In certain European countries where regulation of the manufacture and use of explosives is recognized as a proper means of safeguarding life and protecting users of explosives from dangerous compounds that might be made and sold by persons not possessing sufficient knowledge of technical skill, all explosives from dangerous compounds that might be made and sold by persons not possessing sufficient knowledge or technical skill, all explosives intended for use in coal mining are subjected to tests to determine their fitness for such use.

Up to State Legislatures.

"In the United States, authority controlling the use of explosives lies with the legislatures of several States. Up to the present day the regulations in different States have been far from uniform and in many States have been inadequate. Accurate information in regard to the action of different kinds of explosive materials is necessary for efficient legislation, and such information has been nowhere available. It is to remedy this condition and provide accurate data in regard to explosives, that tests of coal-mining explosives are being made by the Bureau of Mines. These tests serve to show which explosives are safe and which are dangerous for use in coal mining, and to determine such other properties of explosives as are of importance in the safe and efficient use of these materials.

"All explosives that satisfactorily pass such tests as show that they can be fired in considerable quantities in explosive gas mixtures without causing ignition, and in addition possess such qualities of stability, etc., as make them reasonably safe to handle and transport, are termed permissible explosives. Only such explosives are deemed suitable for use in coal mines in which dangerous quantities of fire damp or inflammable coal dust are likely to be met.

The "Permissible" Explosives.

"Permissible explosives of most varied composition have been prepared, but in to the reaction of oxygen with combustible elements, such as carbon and hydrogen, the composition of the explosives being such that the temperature resulting from this combustion is not so high nor so long continued as with ordinary explosives.

An inflammable gas mixture can be ignited either by a very high temperature acting for a short interval of time, or by a lower temperature acting through a longer space of time; but if a low temperature only is produced by the explosive, and this temperature is of very short duration, the ignition of the explosive gas mixtures is much less likely. Accordingly the problem of making explosives for use in coal mines is seen to be, in its simplest form, the making of an explosive, that, although producing a low temperature of short duration, shall nevertheless produce a sufficient quantity of gases, and at sufficient pressure to perform by their expansion the work for which the explosive is intended. Through scientific studies and experimentation, manufacturers of explosives have found ways of obtaining this result. Nitroglycerin, ammonium nitrate, and other well known explosive materials are combined with various substances so as to form explosives that, when properly used, so greatly diminish the risk of accidental ignition of fire damp or coal dust that it may be said to be practically eliminated."

Canadian Steel Bounties.

Important Canadian steel interests have been conferring with leaders of the new Administration in order to press their claims for renewal of the government bounties on pig iron and steel products in order to protect the industry against foreign competition. An investigation of the entire subject is also being urged and it is thought probable an announcement on the question will be issued shortly, the local agitation having reached considerable proportions.

The former bounties, which expired December 31, 1910, amounted to 90 cents a ton of pig iron and $1.30 on steel ingots.

SUMMARY: INVESTMENT SECURITIES IN METAL INDUSTRIES

STOCK AND BOND SALES AT VARIOUS EXCHANGES.

Sales for February 9 to 15, 1912, Inclusive.

	New York*	Pittsburgh	Chicago	Philadelphia	Boston	Total Sales	High	Low	Last
Allis-Chalmers	1,000	.....	.....	.....	.....	1,000	1	⅞	⅞
Allis Chalmers pf.	200	.....	.....	.....	.....	200	7	6⅞	7
American Can	4,520	.....	1,440	.....	.....	5,960	12	11½	11⅝
American Can pf.	5,810	.....	1,120	.....	.....	6,930	92⅞	91	91⅞
American Car & Foundry	1,530	.....	.....	.....	.....	1,530	51¼	49⅞	51
American Car & Foundry pf.	160	.....	.....	.....	.....	160	115⅝	115⅝	115⅝
American Locomotive	800	.....	.....	.....	.....	800	33½	33	33
American Locomotive pf.	350	.....	.....	.....	.....	350	104	103¼	104
American Steel Foundry	200	.....	.....	.....	.....	200	29	28½	28½
American Radiator	.....	.....	10	.....	.....	10	325	325	325
American Shipbuilding pf.	.....	.....	60	.....	.....	60	103	100	102
Amoskeag	.....	.....	.....	.....	354	354	78½	78	78
Amoskeag pf.	.....	.....	.....	.....	156	156	101	100½	100½
Baldwin Locomotive	400	.....	.....	217	.....	617	50½	50	50½
Baldwin Locomotive pf.	1,530	.....	.....	.....	.....	1,530	103¾	101¾	102⅝
Bethlehem Steel	700	.....	.....	.....	.....	700	31½	31½	31½
Bethlehem Steel pf.	600	.....	.....	.....	.....	600	63	59⅝	61
Cambria Iron	.....	.....	.....	150	.....	150	45	44½	44¾
Cambria Steel	.....	.....	.....	630	.....	630	43	42⅜	43
Colorado Fuel & Iron	820	.....	.....	.....	.....	820	26¼	25¾	25¾
Crucible Steel	.....	120	.....	.....	.....	120	11⅞	11½	11⅞
Crucible Steel pf.	.....	50	.....	.....	.....	50	82½	82½	82½
Chicago Pneumatic Tool	.....	.....	725	.....	.....	725	49½	47	47
Electric Storage Battery	.....	.....	.....	234	.....	234	54	53½	54
General Electric	4,285	.....	.....	.....	402	4,687	157½	156¾	156¾
General Motors	400	.....	.....	.....	.....	400	34	33	33
General Motors pf.	100	.....	.....	.....	.....	100	74⅝	74⅝	74⅝
Gt. Northern Ore Prop.	3,250	.....	.....	.....	.....	3,250	37¾	36½	36¾
Harbison-Walker Refractories	.....	10	.....	.....	.....	10	40	40	40
Harbison-Walker Ref. pf.	.....	50	.....	.....	.....	50	99	99	99
International Harvester	600	.....	.....	.....	.....	600	105⅝	105¼	105½
International Harvester pf.	200	.....	.....	.....	.....	200	120	120	120
International Steam Pump pf.	10	.....	.....	303	.....	10	79⅞	79⅞	79⅞
Lake Superior Corp	.....	.....	.....	.....	.....	303	28	27½	28
Lackawanna Steel	300	.....	.....	.....	.....	300	30½	30	30½
McCrum-Howell	.....	.....	1,205	.....	.....	1,205	38⅞	36	38⅞
McCrum-Howell pf.	.....	.....	410	.....	.....	410	90½	89⅞	90
Nat. Enamel & Stamp.	400	.....	.....	.....	.....	400	14	14	14
Nat. Enamel. & Stamp. pf.	200	.....	.....	.....	.....	200	94	93½	94
National Fireproof	.....	505	.....	.....	.....	505	5¾	5½	5¾
National Fireproof pf.	.....	530	.....	.....	.....	530	26½	26	26
National Lead	1,260	.....	.....	.....	.....	1,260	54	53½	53⅞
National Lead pf.	450	.....	.....	.....	.....	450	107⅞	106	107⅞
New York Airbrake	90	.....	.....	.....	.....	90	54	53	54
Pennsylvania Steel pf.	.....	.....	.....	160	.....	160	100½	100	100½
Pittsburgh Coal	250	100	.....	.....	.....	350	17⅜	17	17⅜
Pittsburgh Coal pf.	1,400	115	.....	.....	.....	1,515	80½	77	79
Pittsburgh Steel pf.	100	.....	.....	.....	.....	100	103	103	103
Pressed Steel Car	600	.....	.....	.....	.....	600	32½	30	32½
Pressed Steel Car pf.	300	.....	.....	.....	.....	300	100½	100½	100½
Pullman Company	410	.....	.....	.....	373	783	159½	158½	159½
Railway Steel Spring	500	.....	.....	.....	.....	500	28⅞	27½	27½
Railway Steel Spring pf.	15	.....	.....	.....	.....	15	101⅜	101⅛	101⅛
Republic Iron & Steel	4,430	.....	.....	.....	.....	4,430	23	20⅜	21½
Republic Iron & Steel pf.	6,170	.....	.....	.....	.....	6,170	79½	75⅞	76½
U. S. Cast Iron Pipe	310	.....	.....	.....	.....	310	50¼	50⅛	50¼
United States Steel	692,808	680	1,835	63,231	25,710	781,224	61⅜	59⅞	60½
United States Steel pf.	6,985	.....	.....	10	254	7,249	110¼	107¾	107⅜
Union Switch & Signal	.....	562	.....	.....	.....	562	96¼	93	93
Union Switch & Signal pf.	.....	50	.....	.....	.....	50	112	112	112
Va. Iron C. & C.	200	.....	.....	.....	.....	200	67¾	67¾	67¾
Vulcan Detinning	310	.....	.....	.....	.....	310	23¼	23	23¼
Vulcan Detinning pf.	200	.....	.....	.....	.....	200	81	78	81
Warwick Iron & Steel	.....	.....	.....	954	.....	954	11½	11	11⅜
Westinghouse Airbrake	.....	413	.....	.....	.....	413	158½	157½	157½
Westinghouse Electric	1,000	320	.....	.....	.....	1,320	71⅜	70	71⅜
Westinghouse Electric pf.	.....	90	.....	.....	.....	90	119¼	119¼	119¼
Westinghouse Machine	.....	10	.....	.....	.....	10	20	20	20
Westmoreland Coal	.....	.....	.....	25	.....	25	76	76	76

Quotations are based on New York Stock Exchange, when listed on that exchange. New York totals include sales on Consolidated Exchange.

BOND SALES.

	High	Low	Last
NEW YORK.			
159,000 Allis-Chalmers 5s	57½	51⅛	57½
10,000 Bethlehem Steel 5s	95¼	94⅜	95¼
8,000 Interbor Power 1st	85½	85¼	85¼
19,000 General Motors 6s	99¼	98⅞	99¼
2,000 Int. Steam Pump 5s	93¼	93¼	93¼
100,000 Int. Harv. 5s notes	100⅞	100⅞	100⅞
77,000 Lack. Steel 5s 1915	92⅝	92⅛	92⅛
17,000 Lack. Steel 5s 1923	96⅝	96⅛	96⅛
1,000 Lack. Steel 5s 1950	80	80	80
2,000 N. Y. Airbrake 6s	99¼	99¼	99¼
13,000 Ry. Steel Spring 5s	98¼	97¾	98¼
4,000 Rep. I. & St. 5s 1940	92½	92½	92½
616,000 U. S. Steel 5s	103½	103⅜	103½
500 U. S. Steel Reg.	103⅝	103⅝	103⅝
16,000 West. El. & Mfg. 5s	95	94¼	94¼
2,000 W. El. & Mfg. notes	96½	96½	96½
7,000 West. Electric 5s	102⅞	102⅝	102⅞
11,000 Va. I., C. & C. 5s	98½	98	98
PITTSBURGH.			
27,000 Pgh. Coal 5s	91¾	91¼	91⅜
8,000 Am. Sewer Pipe 6s	87½	86	87½
BOSTON.			
20,000 Illinois Steel 5s 1913	100⅞	100¾	100¾
30,000 Dominion Coal 5s	99¼	99	99

FISCAL STATEMENTS

Chicago Pneumatic Tool.

The annual report of the Chicago Pneumatic Tool Company for 1911 shows net profits of $772,527, compared with $1,054,809 in 1910. Charges of $165,000, against $166,733 in the previous year, left a balance of $607,527, which is equivalent to 9.37 per cent on the $6,485,800 capital stock. Dividends paid aggregated $257,951, the same as in 1910. Allowances for depreciation, etc., make a total of $194,787, against $193,149 in 1910. There remained a surplus of $154,789, which, added to the previous surplus brought the total surplus at the end of the year up to $1,663,938.

Speaking of the falling off in net earnings President Duntley says:

"The net earning are considerable below those for this year 1910, the most prosperous in the history of the company, mainly due to the fact that business conditions generally were most unfavorable, and the market for the products of the company unusually restricted. Particularly noticeable was the falling off in the sales of spare parts, owing to above conditions which materially affected the earnings. The sales of new tools, however, during the past year almost equalled those of 1910, chiefly attributable to the fact the company secured about 4,000 new customers in 1911. The total net earnings of the company for the ten years in which it has been in business amount to $4,254,500. It will, therefore, be seen that the net earnings for 1911 are close to the average and are normal."

Inland Steel.

The stockholders' meeting of the Inland Steel Company, announced for March 5, will vote a 10 per cent increase of capital stock, which is likely to be offered to stocksolders at 125, same as last year.

The extra dividend of 3 per cent, announced January 30, is payable May 1 to stock of record February 10.

It is generally reported that in addition to the issue of new stock for a price probably above par there will also be a stock dividend. Officers of the company say, however, that no plan has yet been agreed upon. A year ago the company increased its capitalization from $6,000,000 to $7,500,000, and $900,000 of the new capital stock was issued at $125 a share.

Lalance & Grosjean Company.

Annual meeting of the stockholders of the Lalance & Grosjean Manufacturing

Company will be held February 14, at 299 Broadway, New York.

Pittsburgh Steel Foundry.

A meeting of the stockholders of the Pittsburgh Steel Foundry will be held in the general office of the company, 1208 House building, Pittsburgh, on April 9, at which the change of the corporate title of the company from the Pittsburgh Steel Foundry to the Pittsburgh Steel Foundry Company will be submitted to the stockholders.

Stockholders also will vote at this time on the proposed increase of capital stock of the company from $400,000 to $1,000,000.

American Radiator Company.

Directors of the American Radiator Company declared an extra stock dividend of 10 per cent, on February 1, payable in common stock to present holders of that issue in the ratio of one share for each ten shares now held. The distribution of new stock, which amounts to $615,000 par value, is out of treasury stock, against surplus earnings. The regular quarterly dividend of 2 per cent and the customary year-end extra dividend of 2 per cent also were declared.

Vulcan Detinning Company.

In order to conform its annual statements to the period covered by reports in connection with the Federal corporation tax, the Vulcan Detinning Company has changed its fiscal year to end December 31 and has sent to stockholders a report covering the nine months from April 1 to the end of the year. The report says:

"Net profits during these nine months, after making all deductions for depreciation and betterments, were $155,791, thus closely approaching the two most successful years in the history of your company, viz., 1902-1903 and 1909-1910, which exceeded the same but slightly.

"In accordance with the policy of your Directors to reduce the 'patents and processes account' from time to time, they have ordered the sum of $325,000 to be charged off this account, and the surplus account is reduced correspondingly."

American Can.

A remarkable increase in charges for depreciation is the feature of the report of the American Can Company for the year ended December 31, by far the most profitable year in the company's history. Earnings totalling $5,416,339 are reported, which compares with $3,456,537 in the previous year, hitherto the company's high record. The depreciation charge last year was $2,500,000, which compares with $633,564 in 1910, until now the heaviest charge ever made in this item. The net profits reported after the $2,500,000 allowance are $2,916,339, which compare with $2,822,972 in the previous year. The balance sheet shows a reduction in the valuation of plants and real estate from $73,199,038 to $71,235,841.

Increases of $1,000,000 in net construction and of $2,000,000 cash, together with $1,500,000 in merchandise inventories more than make up for declines in other items of assets, and leave the total at $93,119,759, compared to $91,793,913 at the end of 1910.

Commenting on the company's position generally, President Graham says:

"This construction of new and extension and improvements of old factories and the increased working capital engaged in their operation requires the use of a large amount of money, and though the statement herewith submitted shows your company free from other than current obligation and with a cash balance in excess thereof, attention is called to the fact that the statements made to you as of the last day of the year are made of conditions between active seasons, when inventories are lowest, accommodations to customers least needed and the capital in use small as compared with that absolutely necessary when stocks of materials, supplies and finished products are at their maximum. There is no clearer way of presenting this than by comparing the financial condition of your company at the time of this statement with that of July and August last, when it was a borrower from the banks of large sums of money, as it will be again during active business seasons."

IRON ORE OUTPUT FOR CALENDAR YEAR 1911.

FROM the reports sent in to the United States Geological Survey by 26 of the largest companies, controlling 80 per cent of the American iron ore output, it is estimated that the total quantity of iron ore marketed in the United States in 1911, not including stocks left at the mines, was between 43,000,000 and 46,000,000 long tons.

The sales for 1910 aggregated 56,889,734 long tons, the largest ever marketed in a single year in the United States, according to the Geological Survey's Bulletin. According to the present estimate, the 1911 output will take fifth place, being exceeded by 1910, 1907, 1909 and 1906, in order named. It is estimated that between 39,250,000 and 42,000,000 long tons was red hematite, the rest being brown hematite, magnetite, and iron carbonate ores.

As the production of pig iron for 1911 may exceed 23,500,000 tons, a larger production of iron ore might appear to be required than has been estimated above, but there were 9,408,235 long tons of iron ore in stock at the mines in the United States at the close of 1910.

CORPORATION ELECTIONS.

WHEELING (W. VA.) MOLD & FOUNDRY COMPANY.—Old board of directors was elected, as follows: C. E. Blue, L. V. Blue, C. H. Copp, F. DuP. Thompson, Henry M. Russell, Jr., George A. Laughlin and B. W. Peterson. Board organized by electing the following officers: President, C. E. Blue; vice president, L. V. Blue; secretary, H. S. Bradley; chief engineer, F. DuP. Thompson; treasurer, Hullihen Quarrier.

PENNSYLVANIA ENGINEERING WORKS (Ellwood City, Pa.)—Old board of directors and officers were re-elected. The officers are Edward King, president and treasurer; L. W. Beadle, vice president and general manager and Charles L. Baldwin, secretary.

NILES TOOL WORKS (Hamilton, O.)—Directors: R. C. McKinney, James K. Cullen, George T. Reiss, Miles T. Watts and J. L. Blair. Directors organized by electing James K. Cullen, president; George T. Reiss, vice president; James L. Blair, secretary; Miles T. Watts, assistant secretary; Charles Cornell, treasurer, and Lucius B. Potter, assistant treasurer.

ENTERPRISE ENAMEL COMPANY (Bellaire, O.)—Old board of directors was re-elected, as follows: William Lipphardt, C. L. Dorer, Charles Lipphardt, L. F. LaRoche, R. C. Faris, C. M. Wyrich and Louis Lipphardt.

PENNSYLVANIA GAS COMPANY (Warren, Pa.)—Directors: Walter Jennings, New York; Joseph Seep, Titusville; J. B. Crawford, Oil City; L. B. Dryer, New York; L. L. Graham, Oil City; J. P. Jefferson, Warren; Jerry Crary, Warren; M. W. Jamieson, Warren; W. W. Beatty, Warren. Board elected the following officers: Walter Jennings, president; J. P. Jefferson, vice president; W. H. Filler, secretary and treasurer; J. W. Kitchen, assistant secretary and assistant treasurer; L. B. Dryer, comptroller; J. B. Crawford, general manager; L. L. Graham, manager title and tax department; Raymond Cross, general superintendent.

Dividend Announcements.

WHEELING STEEL & IRON.—Regular quarterly 2 per cent, payable February 9.

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PITTSBURGH, PA., FEB. 12, 1912.

The Iron Ore Situation.

IRON ORE conditions are attracting an unusual amount of attention for this season of the year. Several developments have occurred lately which make the prospects of the coming LAKE SUPERIOR ore season of peculiar interest. The principal developments fall under three heads: (1)—A change in the position as to foreign ore; (2)—Changes, accomplished and in prospect, in the cost of moving LAKE SUPERIOR ores to furnaces; (3)—The tariff bill placing iron ore on the free list.

The changes, accomplished and prospective, in the cost of carriage of LAKE SUPERIOR ore, cover the rail rate in MINNESOTA, the dock charges at LAKE ERIE ports, and the rail rate to PITTSBURGH. The UNITED STATES STEEL CORPORATION last fall ordered the officials of the two MINNESOTA ore roads which the Corporation owns to reduce the rates to an even figure of not over 60 cents. The rates had been 80 cents from all parts of the MESABA range to LAKE SUPERIOR ports, and 80 cents, 90 cents and $1 from various parts of the VERMILLION range.

These rates from the VERMILLION range are of no public interest, inasmuch as the STEEL CORPORATION is the only shipper from that range, and it matters not what rates it charges itself. The important point is that the MESABA rate is reduced from 80 cents to 60 cents, for the coming season, the change having been effected too late to affect last season's shipments. There is more MESABA ore than of all other ore combined, shipped by independent interests. The third road, the HILL or GREAT NORTHERN, of course concurs in the reduction from 80 to 60 cents.

In some quarters this rate question is not regarded as settled. For many years it was regarded as hopeless to expect a reduction in the rate, but when the agitation started it was for a 40- or 50-cent rate, the agitation for a 40-cent rate probably involving hope for a compromise on 50 cents, and in some quarters it is still expected that eventually the rate will be fixed by the INTERSTATE COMMERCE COMMISSION, now admitted to have jurisdiction, at 50 cents.

The dock charges last year at LAKE ERIE ports were 15 cents to the vessel and two cents to the railroad, on through ore. The matter has been before the INTERSTATE COMMISSION, and the expectation of interested parties is that an order will be made fixing the charges at five cents to the vessel and nothing to the railroad. This would reduce the charge to vessels by 10 cents, and last season's rate of 60 cents, charged by vessels, would then drop to 50 cents. It is possible the reduction will not be as large as hoped for, but a substantial reduction is regarded as certain. The two cents charged by the dock companies, usually subsidiaries of the railroad companies, to the railroads, is expected to come off, but presumably with a readjustment of rail rates, particularly the rate to PITTSBURGH. This stands at 98 cents on through ore, of which the railroad pays out two cents to its dock company and 26 cents to the terminal railroads in the PITTSBURGH DISTRICT, owned by the furnace companies.

The reductions in rates from MESABA range to LAKE SUPERIOR ports, and in the lake rates from the various ports to LAKE ERIE, are expected to be given to the consumer by the price of ore being reduced, such prices being always made at Lake Erie dock. This, it will be seen, would effect a greater reduction in MESABA than in old range ore prices.

As to foreign ore, there is a boom in the foreign iron and steel industries, not as strenuous as the booms which we have sometimes had here, but quite substantial from the more moderate foreign viewpoint. At the same time there have been sharp advances in ocean freights, and the result is that foreign ore prices, delivered here, are much higher than last season, with the result that the seaboard plants have bought very little foreign ore.

Finally comes the UNDERWOOD BILL revising SCHEDULE C, which has passed the HOUSE and is now in the SENATE. There has been considerable discussion of its iron ore provision, based more on theory than on practical considerations, since as a matter of fact it makes little difference to the iron trade whether ore is placed on the free list or not. The PAYNE-ALDRICH BILL of 1909 reduced the tariff from 40 cents to 15 cents. CUBA has a preference of 20 per cent, so that the reduction in the case of Cuban ores was from 32 cents to 12 cents. These rates of 15 cents and 12 cents are very low, considering how the cost of LAKE SUPERIOR ore carriage may be reduced at a stroke by nearly as much, in the case of the dock charges, and by more in the case of the MINNESOTA rate, while all the changes in recent years in prices of LAKE SUPERIOR ore on LAKE ERIE dock, whether advances or declines, have been by 50 cents at a stroke. The proposed free ore has come in for much criticism and much defense, when as a matter of fact the amount involved is trifling.

Besides, the chance can hardly be considered even remote that the UNDERWOOD BILL, in anything like its present form, will ever become a law.

The Iron and Steel Situation.

IN THE past fortnight there have been declines in quotable prices upon several finished steel products. It has again become possible to buy tin plate, in large lots, at less than the regular market quotation of $3.40. In sheets there are several mills willing to sell on the basis of 1.85c, $1 a ton under the advanced price established in December. Bars, plates and shapes can be bought on attractive orders at 1.10c, Pittsburgh. Here are declines in five important finished steel products, products which involve more than one-half the total finished steel output of the mills, outside of rails.

What is the matter with business? Many of the producers say political and other agitation, including the government activities along the line of enforcing the SHERMAN LAW, CONGRESSIONAL investigation, etc.

We agree with that statement. Questioned farther, these producers would take the stand that the "agitation" has disturbed and is disturbing the buyers, making a poor market. With that we should not agree at all. We believe it is the producers who are disturbed. The actual market condition, which is not generally understood, shows this. Most of the subsidiaries of the UNITED STATES STEEL CORPORATION are well sold up. The AMERICAN SHEET & TIN PLATE COMPANY is out of the market, except at the regular prices. The CARNEGIE STEEL COMPANY is oversold, actually short of steel. Based upon the rate of specifying in January, (and whatever may be said of the November-December burst of specifying,

there is no likelihood that the January rate will be maintained) it is sold up for several months to come on its important finished products; rating its finishing mills as operating full capacity, but with the demands upon it for billets and sheet bars from its brother subsidiary in the STEEL CORPORATION and from outside finishing mills, it is oversold. It has put in full operation every steel mill it has, including recently North Sharon and Columbus, and yet is not making enough steel to go around.

The independent mills have had the market in their own hands in the past few weeks; and it is with them alone in the market that prices have declined. The country's consumption must be fairly good, or the STEEL CORPORATION could not be so comfortably fixed. The past few weeks have been extremely bad from a weather standpoint, and there is every prospect that consumptive requirements, and specifications, will increase week by week. In these circumstances declining prices, if due to "agitation," are due to the agitation affecting the sellers rather than the buyers. At first thought the producers would refuse to admit this, but can they reasonably deny it?

Underwood's Double Blow.

IT IS a double blow which the UNDERWOOD TARIFF, recently passed by the HOUSE OF REPRESENTATIVES, aims to deal the steel industry. The fact is well known that the rates upon finished steel products have been cut to a drastic degree, and in many cases to a level quite inconsistent with continuance of the present wage rates paid in the steel industry. The fact is much less well known that the bill, if enacted into law would deal another blow to the steel industry, in increasing the price of the one raw material which it is forced to import, ferromanganese.

Not content with making great reductions in the protective duties, making them no longer protective, the UNDERWOOD BILL seeks to tax the steel industry directly by placing a duty of 15 per cent, ad valorem, on ferromanganese and other alloys. In the DINGLEY LAW, pig iron, spiegeleisen, ferromanganese, ferrosilicon, etc., were all made dutiable at $4 a ton. In the PAYNE-ALDRICH TARIFF this rate was reduced to $2.50. In the past five years the average value of 80 per cent ferromanganese, at foreign shipping port, has been about $40 per ton. The similar average value of pig iron has been between one-fourth and one-third as much. In making the specific duty the same on each, regard was had to the fact that the high priced material was one which we do not produce as a rule, but do consume, so that on pig iron the duty was a protective duty, while on ferromanganese the duty was a revenue duty.

One of the fundamental features of the Democratic tariff policy has been that of free raw materials. Now, ferromanganese is a raw material of the steel industry, precisely in the same way that iron ore is a raw material of the blast furnace industry. In the manufacture of steel by either the BESSEMER or the open hearth process it is necessary to add a certain quantity of ferromanganese or spiegeleisen to the steel before it is poured, in order to carburize and purify the material, spiegeleisen in the case of high carbon steel, ferromanganese in the case of soft steel. If there is anything of consistency in the Democratic program, ferramanganese should be placed on the free list. Instead, the UNDERWOOD BILL proposes to tax it 15 per cent ad valorem.

The present market price of ferromanganese at Baltimore is $41, which makes $38.50 before the $2.50 duty is paid, or about $36 at foreign shipping port. The 15 per cent duty would be based upon the value at foreign shipping port, and would, therefore, amount to about $5.40 per ton, more than double the present duty, and 35 per cent more even than the DINGLEY duty.

There is ground for the presumption, considering various inconsistencies in the UNDERWOOD BILL, that the duties as to pig iron, ferromanganese, etc., were arranged without specific information as to the conditions. It is quite likely that the WAYS AND MEANS COMMITTEE did not know what it was doing. If it knew, it confesses to making a direct effort to injure the steel business even at the expense of surrendering Democratic principles, advertised for more than a generation.

Why should the Democratic WAYS AND MEANS COMMITTEE wish to injure the steel industry, if its position is this rather than one of ignorance? No one can imagine any reason unless that the committee holds that there is a "trust" in the steel industry. If there is a trust, what is it but the UNITED STATES STEEL CORPORATION? If that is the position, then the WAYS AND MEANS COMMITTEE certainly is ignorant, for the fact is that this UNITED STATES STEEL CORPORATION is the one steel producing interest in the United States which makes its ferromanganese. The others import their ferromanganese. The STEEL CORPORATION imports the ore—which MR. UNDERWOOD kindly makes free—and makes its ferromanganese, while its competitors, the independent steel manufacturers, must import their ferromanganese and would have to pay this Underwood duty of $5 or $6 a ton. Nothing could be more comfortable for the STEEL CORPORATION than this. On any possible surmise, it seems perfectly clear the committee did not know what it was doing.

CONVENTIONS SCHEDULED FOR THE COMING YEAR.

INTERSTATE MANTEL & TILE DEALER.—Cincinnati, O. (Sinton hotel), February 13-15. Joseph W. Lantry, New York.

ENGINE & BOAT MANUFACTURERS. — New York (Sixty-ninth Regiment Armory), February 17-24.

CANADIAN MINING INSTITUTE.—Toronto, March 6, 7, 8, 9.

NATIONAL BRICK MANUFACTURERS.—Chicago, March 6-9. T. A. Randall, Indianapolis.

NATIONAL PAVING BRICK MANUFACTURERS. Chicago, March 4. W. P. Blair, Locomotive Engineering building, Cleveland.

AMERICAN CERAMIC SOCIETY. — Chicago, March 4-6. Edward Orton, Jr., O. S. U., Columbus, O.

AMERICAN BUILDING BRICK ASSOCIATION.—Chicago, March 6. J. Parker Fiske, Flatiron building, New York.

NATIONAL CLAY MACHINERY ASSOCIATION. Chicago, March 7-12. W. N. Durbin, Anderson, Ind.

SUPPLY MEN'S ASSOCIATION OF BOILER MANUFACTURERS (U. S. and Canada)—St. Charles Hotel, New Orleans, March 11-14.

RAILWAY ENGINEERING ASSOCIATION.—Chicago, March 19-21. E. H. Fritch, Monadnock block, Chicago.

AMERICAN SUPPLY & MACHINERY DEALERS' ASSOCIATION. — Norfolk, Va., May 13-15. F. D. Mitchell, 309 Broadway, New York.

MASTER BOILER MAKERS' ASSOCIATION.—Pittsburgh, May 14-17, 1912. Harry D. Vought, 95 Liberty street, New York.

OHIO SOCIETY MECHANICAL, ELECTRICAL & STEAM ENGINEERS. — Pittsburgh, May 16, 17, 18. F. E. Sanborn, Columbus.

RAILWAY STOREKEEPERS. — Buffalo, May 20-22.

AMERICAN HARDWARE MANUFACTURERS' ASSOCIATION AND SOUTHERN HARDWARE JOBBERS' ASSOCIATION.—Nashville, Tenn., May 28-31.

RAILWAY INDUSTRIAL ASSOCIATION.—Kansas City, May 12. G. L. Stewart, St. L. S. W. Railway, St. Louis.

AIR BRAKE ASSOCIATION.—Richmond, Va., May 7-10. F. M. Nellis, 53 State street, Boston.

AMERICAN SOCIETY MECHANICAL ENGINEERS.—Cleveland, O., June 4-7. Calvin W. Rice, New York city.

NATIONAL SHEET METAL CONTRACTORS' ASSOCIATION.—St. Louis, June 10-14. R. E. Mackey, St. Louis.

MASTER CAR BUILDERS. — Atlantic City, June 12-14. J. W. Taylor, Chicago.

RAILWAY MASTER MECHANICS.—Atlantic City, June 17-19. J. W. Taylor, Old Colony building, Chicago.

RAILWAY SUPPLY MANUFACTURERS. — Atlantic City, June 17-19, 1912. J. D. Conway, 2135 Oliver building, Pittsburgh.

RAILWAY BRIDGE & BUILDING ASSOCIATION. —Baltimore, October 15-17. C. A. Lichty, C. & N. Railway, Chicago.

THEY are asking for versatile machinery nowadays. Here is a letter published by "Gas Engine," the Cincinnati

(O.) monthly magazine devoted to that trade, which was received recently by a manufacturer:

Gentlemen:—What progress are you making in the gas-engine business? Not seeing any of your ads in this part of the country, I commenced to think that you had retired from active life.

I am waiting to see an engine come on the market with four cylinders, about the weight of the six-horsepower engine and produce 10 to 20 horsepower. I would like to see it use kerosene for fuel, and have each cylinder independent from the others, so that one cylinder could be used to run the grindstone, two cylinders could be used to run the wood saw, three cylinders to run the thresher and four cylinders run the stone crusher. I hope to see it so constructed that a poor man can buy it with one cylinder and when he gets able he can buy the second cylinder and so on according to his means.

There is nothing new under the sun, and Ohio is in the lead on machinery. Can't you take the first step in 1912?

Respectfully yours,
A. B., Old Town, Maine.

P. S.—Please don't refer my letter to your agents; throw it into the waste-basket.

Twenty Years Ago.

JOSEPH PHILLIPS continues his article on the manufacture of tin plate in our issue of February 12, 1892, an even 20 years ago. Part II of his article starts out by saying that if anyone suggests the old-fashioned jaw shear for shearing he should be arrested at once. He was right, but it is a fact that several years later the MOREWOOD COMPANY, GAS CITY, IND., an American tin plate company financed by British capital and run in the British manner did use the alligator or crocodile shear for squaring the pack, when all the other mills in the UNITED STATES were using the American squaring shear. MR. PHILLIPS does not go into details; he dismisses the whole thing by saying, "Use the squaring shear"; but it may be mentioned that the jaw shear required that the pack be chalked out, and the wage cost, governed by an Amalgamated Association scale, was about three times as great for the jaw as the squaring shear. MR. PHILLIPS mentions that he had heard it suggested that four rolls be mounted in the cold roll housing, one above another, so that three passes could be given, back and forth, in the one stand of rolls. He says that was tried years ago, and "worked for years, a most miserable improvement," whatever such language may mean.

The A. GARRISON FOUNDRY, PITTSBURGH, had turned out one of the largest chilled rolls ever cast in the UNITED STATES, 34x 126 inches, weighing about 20 tons in the rough, for the OTIS STEEL COMPANY, CLEVELAND. The company had received an order from the STANDARD IRON COMPANY, BRIDGEPORT, O., for two 22-inch sheet mills. The STANDARD IRON COMPANY afterwards consolidated with the AETNA IRON & STEEL COMPANY, making the AETNA-STANDARD IRON & STEEL COMPANY. The AMERICAN SHEET & TIN PLATE COMPANY now owns the plant.

THE DEATH RECORD

Thomas M. Gallagher, Former Vice President Scullin-Gallagher Company, St. Louis.

Thomas W. Gallagher, until 18 months ago vice president of the Scullin-Gallagher Iron & Steel Company, of St. Louis, Mo., died February 1 at St. Louis, after a six-months' illness, which followed a nervous breakdown.

Mr. Gallagher was known throughout the West as one of the best informed men connected with the iron industry. He was born in New Orleans, La., 71 years ago. When 2 years old his parents moved to Cincinnati, Ohio, where he received his education in the public schools. He removed to St. Louis in 1855 with his parents. His father was a blacksmith and he helped in the shop. In part of the civil war Mr. Gallagher was employed by the government at the St. Louis arsenal. In 1862 he went to Jackson, Tenn., where he worked for the government on the Mobile & Ohio Railroad. Six months later he was sent to Columbus, Ky., by the government to act as foreman of the Mobile & Ohio Railroad shops, where he remained until 1865.

Gallagher returned to St. Louis in 1866 to enter the employ of Thomas Howard & Company, manufacturers, Eighth street and Clark avenue. After becoming a stockholder of Shickle, Harrison & Howard Iron Company in 1882 (he had been with the firm as foreman since 1869), Mr. Gallagher was made superintendent of the works, and vice president and general manager in 1895. From 1899 to 1910 he was vice president of the Scullin-Gallagher Iron & Steel Company, and largely responsible for its rapid growth and success. He is survived by his widow, and two sons, Thomas E. Gallagher, of St. Louis, and Andrew B. Gallagher, of Webster Grove, Mo.

J. Howard Mitchell.

Howard Mitchell, one of the founders in 1867 of the William Butcher Steel Works, which was reorganized into the Midvale Steel Company, died last week at Hathoro, Pa. He was 79 years old.

Contract placed in Hamburg for new Hamburg-American liner, to be used in Panama canal trade, to cost $2,500,000; tonnage 16,500.

THE TRADE PRESS

The Conflagration Danger in Fireproof Buildings.

[From Metallurgical and Chemical Engineering.]

The appalling fire which destroyed the Equitable building in New York city on January 9 marks the end of an historic structure. The general press has lamented over the passing of so much that was of interest in connection with the building, like the Lawyers' Club, the original downtown lunch club, and the classical place where the formation of the "Steel Trust" was first conceived. The fire proved conclusively that a building of brick, stone, steel and concrete can be destroyed by fire, and many morals have been pointed out that architects and city builders should draw from the disaster. At this place the fire may be subjected to a discussion from the standpoint of a metallurgical engineer.

For it is not at all a stress on the imagination to compare the Equitable building on fire with a blast furnace. Like a blast furnace, the entire structure had a refractory casing. Like a blast furnace, it contained a lot of combustible material, for the woodwork, books and papers had a high calorific value. While there was no forced blast, yet the west wind delivered a large volume of air through the windows and doors, which can be regarded as the tuyeres. This blast was reinforced by the suction of the burning gases. Finally, the whole structure was effectively water-cooled by the spray and streams of scores of fire engines, and the opinion has often been expressed than an iron blast furnace should be cooled by a stream of water from top to bottom.

It is, of course, a mathematical truth that as any metallurgical furnace increases in size the percentage of heat lost by radiation decreases, for the amount of generated heat increases as the cube of any linear dimension and the amount of heat given off to the surroundings by radiation and convection increases only as the squares of any linear dimensions. It follows directly that it is much easier to attain a high temperature in a big furnace than in a small furnace. The same identical reasoning applies to the Irishman's "fireproof building on fire." With a large building the heat generated by the combustion has a comparatively smaller chance to get out and consequently the temperature attained is correspondingly higher. Practical people like the firemen and underwriters do not have the exact theoretical knowledge to confirm their practical experience, or the erection of "fireproof" buildings would not have been

carried to such an extent as it has.

The fear has been expressed that other buildings in the downtown district are dangerous and all the more because they are called fireproof. With the great number of people congested in the lower part of Manhattan Island a general conflagration suggests sickening and frightful possibilities. The place is like a rabbit-warren and should be made like a rabbit-warren completely. All the large buildings should communicate with each other on every fifth floor and should also have communicating cellar passages. There should also be steel bridges at convenient intervals and on different levels so that people could pass from a building on one side of the street to the other side at the higher levels.

There should be an abundance of the modern chemical fire extinguishers which use carbonated water or carbon tetrachloride. These are most efficient to prevent incipient fires. It would be still better to have an entire system of chemical automatic extinguishers—something like the sprinkler system, but making use of the property that carbon dioxide has to prevent combustion.

Modern applied science has increased the risk of life in new ways, while it has of course diminished the risk of life in old days. There was a time when epidemics were havoc-workers. But bacteriology and hygiene seem to preclude this at present. We no longer are afraid of Indian raids, for the rifle has caused the Indian to be peaceful. But the danger from fire in the center of a modern city is terrible, for fireproof buildings are misnamed. It is true, however, that modern science has given us means to prevent the disasters. Unless proper regard is given to the fact that it is wrong to place combustible stuff in a structure that is refractory without efficient and perfect means for confining the fire to an insignificant space, some day the world will wake up and read about an American disaster that will be as horrible as it will be historic. With the idea fixed in the mind of the nation that a disaster is possible, but that it will be impossible if proper scientific means of prevention are employed, the battle is half won.

"Legislative Information Bureau" for Ohio Gas Men.

The Ohio Gas Association, in session at Columbus, O., last week, provided for the establishment and maintenance of an information bureau in Columbus, which will keep all members fully posted on the work of the Legislature, upon the rulings of the Public Service Commission and the procedure before the Tax Commission. Fifty natural and artificial gas companies were represented.

BUSINESS TROUBLES

CENTRAL IRON & STEEL (Harrisburg, Pa.)—The Central Iron & Steel Company, operating a plant at Harrisburg, Pa., was placed in the hands of receivers February 6, by presiding Judge Kunkel, of the Dauphin County Court, on petition of Henry Gilbert & Son, of Harrisburg, creditors, and Mrs. Sarah G. McCauley, also of Harrisburg, a stockholder.

Charles L. Bailey, Jr., an attorney, and James M. Cameron, of Harrisburg, and J. V. W. Reynders, of Steelton, Pa., vice president of the Pennsylvania Steel Company, were appointed receivers.

Plenty of orders are booked, but inability to convert a large stock of raw material into money, is generally supposed to be the cause of the proceedings in court.

The order of the court gives the receivers authority to operate the plant and to purchase supplies, as well as to sell raw material, and it is believed that the plant will be kept in operation.

The company has a capitalization of $2,000,000, most of the stock being held in Harrisburg, and a bond issue of $1,239,000. The value of the plant is declared to be well above all liabilities and the bonds.

The Central Iron & Steel Company operates two blast furnaces at Harrisburg, delivering molten iron to its open hearth department. The two stacks are rated at 100,000 tons a year. Its open hearth department has four 50-gross-ton basic furnaces. The two rolling mills are devoted mainly to the manufacture of steel plates, having a capacity in excess of 100,000 tons of finished product. The company also owns the Chesapeake nail works at Harrisburg, which it has leased to an outside interest. It controls the Connellsville Basin Coke Company, with 2,400 acres of coal lands and 225 beehive ovens in Monongalia countby the consolidation of the Central Iron by the consoliadtion of the Central Iron Works, the Chesapeake Nail Works, the Paxton rolling mills and the Paxton furnaces. A year ago it was reported the company was to head a consolidation with several other Harrisburg interests, but nothing came of the plan.

AMERICAN CEMENT COMPANY. — The American Cement Company, a $2,000,000 corporation, was thrown into the hands of a receiver at Philadelphia, February 6, upon the application of stockholders who allege that competition and production had injured the business of the company and that unless it was run under the supervision of the court there would be a great loss to creditors and stockholders. Judge McPherson, in the United States District Court, appointed Sidney W. Keith, Robert W. Lesley and John Scott, Jr., as receivers. The American Cement controls nine subsidiary concerns. They are: Lesley-Trindle Company, Reliance Cement Company, North American Portland Cement Company, Norfolk Portland Cement Company, Vindex Land Company, and United Building Material Company.

The parent company was incorporated in New Jersey on August 31, 1899, with a capital stock of $2,100,000. Of this amount 42,000 shares of stock were issued. The present funded indebtedness is represented by outstanding bonds with a face value of $550,000 secured by mortgage executed by the Girard Trust Company, under which 9,991 shares of stock is pledged together with certain real estate in New York and Virginia.

The petitioners set forth that the indebtedness of the company is $925,000 and the face assets are $1,875,000.

TENNESSEE COAL COMPANY.—The Tennessee River Coal Company, of Rexton, Marion county, Tenn., filed a voluntary petition in bankruptcy February 6, at Chattanoogo, in the office of the United States Distrilt court clerk. The assets are scheduled at $547,750 and the the liabilities at $381,913.24.

CINCINNATI EQUIPMENT COMPANY. — First meeting of the creditors of the Cincinnati Equipment Company, alleged bankrupt, was held last week, at Cincinnati, in the office of Referee in Bankruptcy William H. Whitaker. Edgar M. Johnson was appointed trustee. The next meeting of the creditors will be held February 27.

CENTRAL BEER PUMP.—Receivership petition has been filed against Central Beer Pump Company, manufacturers of beer pumps, 239 East Firty-first street, New York, by creditors, with $7,000 in claims.

Nine-Hour Law for Women in Ohio.

The Ohio Supreme Court has upheld the validity of the nine-hour work day law for women in that State. This law was passed at a recent session of the legislature. It prohibits the employment of girls or women in Ohio longer than nine hours a day. Women and girl clerks are not allowed to work all day Saturday and Saturday evening in stores, according to the new statute.

Electric Patent Litigation.

In the cases of the Westinghouse Electric & Manufacturing Company against the Bullock Electric Manufacturing Company, patent suits, Judge Hollister last week handed down final decrees in Federal Court at Cincinnati, and dismissed the bills of complaint.

MARKET CONDITIONS IN PIG IRON

THE LOCAL MARKET.

Basic Continues the Weak Spot in Local Situation.

PITTSBURGH.—Basic iron continues to be the weak spot in the Pittsburgh pig iron situation. The explanation offered by merchant iron producers is that the principal selling of basic has been done by two interests not regularly in the merchant iron field—Crucible, at Midland furnace, and LaBelle, which finds itself with more pig iron than its finishing mills demand. Quotations on basic still lack stability, occasional offerings being heard of at less than $12.50 Valley furnace, although this is considered properly the minimum. Two large merchant producers continue to hold basic at $13, although of course they are practically out of the present market.

Demand for Bessemer has freshened, but one tonnage is known to have passed last week at approximately $14 Valleys. The foundry iron market shows an undertone of strength, due to the fact that the furnaces now operating are very well sold up. Only half the foundry iron furnaces are operating and they have practically no stocks.

While the general price of No. 2 foundry iron is $13 Valley, a price of $13.25 Valley is frequently secured, as when a certain brand is required to round out a mix. Several small lot sales in the past week were noted at this price. One important interest is holding strictly to this figure, and has turned down bids of $13.15. No difficulty is experienced in getting $13.25 furnace on small lots of malleable.

The United Steel Company, Canton, is ready to close on 2,000 tons of basic, March delivery. A Springfield (O.) radiator interest wants 1,000 tons of No. 2 for second quarter, on which Eastern Ohio concerns have submitted bids. The Westinghouse interests may take some foundry iron for delivery at Cleveland during March and April.

Foreign Inqiry for Iron.

NEW YORK.—Business continus dull in the eastern district, and developments of the past two or three days do not point to any further business of consequence outside of probably pipe iron and filling of orders for European shipment. The inquiry from southern Italy of 10,000 tons of No. 3 southern for immediate shipment, which developed Monday, is still in the New York market, and it is probable it will not be filled at the price offered. According to the cable regarding this inquiry the foreign purchaser offers a little more than $9, which is about $1 under the quotation. However, it is believed a satisfactory price basis can be reached.

The firmness of southern grades continues; there has been no change in quotations, and scarcely any shading is reported. The heavy buying of pipe iron within the past two weeks may create a scarcity of low grade material, and probably will result in slightly better prices. Stocks in consumers' yards are reported as low; a considerable reduction is expected to be shown by the middle of the month.

Heavy Deliveries at Philadelphia.

PHILADELPHIA.—Eastern furnaces are making heavy deliveries on orders placed some time ago, but sales, they report, have been very few. In the Philadelphia district, No. 2X foundry iron is quoted at $14.85@15.25, but the average remains close to $15.00. The same price range has held in this section since the middle of December.

Steady Selling in South.

BIRMINGHAM.—Minimum for second quarter on No. 2 iron still is quoted at $10.25 Birmingham, with occasional sales of spot at $10. The make is not being increased, and will not for a while, notwithstanding the steady selling of iron. The home consumption is on the increase and promises to improve considerably more. Cast iron pipe makers especially have orders in hand or in sight that will require a large tonnage in pig iron before the business has been completed. Some of these consumers of iron have placed business, but it is admitted that there is yet quite a quantity of iron to be purchased.

The newly announced Pacific coast freight rates, in effect March 11, will give Birmingham a rate into Oregon territory $2.40 a ton less than formerly.

Cast Iron Pipe Orders.

NEW YORK.—Large orders are being placed in the cast iron pipe market. At Chicago, contracts aggregating 25,000 tons have been placed and bids were opened by the city on February 6 for 25,000 tons additional. The United States Cast Iron Pipe & Foundry Company will furnish 2,500 to 3,000 tons water pipe for Macon, Ga. St. Paul's requirement of about 5,000 tons is understood to be placed with Virginia manufacturers. Atlanta, Ga., is in the market for 2,000 tons. Bids will be opened during the next two weeks on several small contracts totaling about 8,000 tons in New York. Carload lots of 6-inch are quoted at $22 to $23 per net ton, tidewater.

PRINCIPAL PIG IRON SALES OF THE WEEK.

TONS.

Pittsburgh.

1,200 FORGE from Valley furnace, first quarter, $12.50 furnace.

200 No. 2 FOUNDRY, February delivery, $13 Valley furnace.

Chicago.

3,000 SOUTHERN No. 2, second quarter, $10, Birmingham, to Central Illinois consumer.

1,000 NORTHERN MALLEABLE to Mississippi valley consumer, second quarter, at concession.

Cincinnati.

1,000 MALLEABLE to Indiana interest, $13 Ironton.

New York.

3,000 NORTHERN No. 2X to New England buyer, second quarter, $13.50, Buffalo furnace.

Inquiry for Ferro-Manganese.

BALTIMORE.—Interest is beginning to develop in ferromanganese for prompt shipment. A sale was closed last week for 500 tons for immediate shipment at a basis of $41 f. o. b. Baltimore. Manganese is high, owing to the shortage, which resulted from the failure to arrive of a steamer with a cargo of 3,500 tons.

BRIDGE AND STRUCTURAL.

Steel Work in Wheeling District.

The fabricating shops of the Riverside Bridge Company, Martins Ferry, O., are turning out the material for the new auditorium building, Wheeling. The iron is the heaviest that has entered any building in Wheling. The company also is turning out the fabricated steel for the new German bank building, Wheeling, and the Exchange National Bank building extensions.

Heavy Bridge Work.

Shipments of steel are going on for the new railroad bridge across the Monongahela river at New Geneva, Pa., for the Western Maryland railroad. The American Bridge Company expects to begin the erection of the structural work on the bridge the present week. McMennamin & Simms, contractors, have charge of the sub-structure. Four piers are in and work is proceeding on the fifth. The bridge is of unusually heavy construction.

Protect the Name "Hupp."

At Detroit, last week the Federal Circuit court granted a decree permanently restraining R. C. Hupp, founder of the Hupp Motor Car Company, and his brother, L. G. Hupp, from using their own names in any way in connection

with the manufacture of gasoline automobile. The decree is regarded as very important in that it fixes a precedent for all business disputes involving the use of a trade name.

The Hupps retired from the Hupp Motor Car Company a few months ago because of difference over the design of a new car, and organized a new company, calling it the R. C. Hupp Corporation. The Hupp Motor Car Company brought suit, which ended in the decree of last week. The Hupps are ordered to change the name of their company, omitting the word "Hupp." They must not use the word in any of their advertising, nor upon their product, and the only use of it permitted is upon their stationary.

THE COKE MARKET.

Prices Recede from High Point of January—Output Falls Off.

CONNELLSVILLE.—The coke region seems to have touched the high point in output and selling price during January. The week ending February 3 showed a falling off of 40,000 tons from the week preceding, changeable partly to the labor shortage and weather. The reduced production affected the furnace producers most severely, the merchant producers more than holding their own. The "Courier's" weekly comparisons are as follows:

	Week Ending	
Coke Produced By—	Jan. 27	Feb. 3
Furnace interests (tons)	255,076	212,230
Merchant ovens (tons)	145,521	147,923
Total output (tons)	400,597	360,153
Active ovens	30,349	30,487
Shipments (cars)	11,271	10,623

Reviewing conditions, the "Courier" says:

The merchant operators increased their production several thousand tons. The furnace interests blew in some 3,000 ovens last month, but they do not seem to have immediate use for all the product. Some of it is being stocked and last week the bulk of the furnace ovens laid off one day, while the merchant ovens practically ran full time.

Prices Slightly Easier.

PITTSBURGH.—Through demand for prompt coke continued brisk all week, supplies were more easily had, and the minimum for spot shipment receded from $1.90 to $1.80—which is still 30 cents above the prompt price for furnace coke at the close of January.

The demand was much scattered. No further contracts for furnace coke are reported, but it is believed that several are under negotiation with furnaces that have decided to start in operation in the near future. Foundry coke is firmer with a minimum of $2.20@2.25 for prompt shipment.

CRUDE AND FINISHED STEEL PRODUCT

STRUCTURAL SECTION DULL.

Large Awards Are Withheld in the East—Falling Prices.

NEW YORK.—The market on steel for building purposes is weaker. Large awards are held up, and in structural material the market is dull. Prices on fabricated material are much easier. Plates and shapes are quoted to Tidewater fabricators at a shade under figures of a week ago.

The Wabash is inquiring for 15,000 tons of standard steel rails and 3,000 freight cars.

The Bethlehem Steel Corporation has taken an order for 3,500 tons of open hearth steel rails for the New York, Ontario & Western. It is officially denied that the Lehigh Valley has ordered 10,000 tons additional from the Bethlehem.

The railroad equipment market is dull, and with the railroads showing decreases from the earnings of last year there seems little upon which to hang predictions of any early improvement. Besides, the roads are fairly well supplied with equipment. The only orders of importance which are pending, in addition to that of the Wabash, are for 2,500 cars for the Western Maryland and 2,500 for the Bessemer & Lake Erie.

United States Light & Power Company has an inquiry pending for 14,000 tons for a power house in New York. Structural contracts awarded during the week in New York territory aggregate less than 15,000 tons.

Panama Supplies.

Proposals will be received by the General Purchasing Officer, Isthmian Canal Commission, Washington, on February 23, for structural steel, material for steel cylinders, rivets, bolts, nails, pipe wrenches, manilla rope, canvas, etc. (Circular 680).

For Spillway Machinery.

Proposals for motors, centrifugal pumps, float switches and pump motor starters for the canal locks and spillways, will be received at the office of the general purchasing officer, Isthmian Canal Commission, Washington, until March 8.

Electric Sign Law Defeated.

St. Louis city council last week defeated a proposed ordinance for electric signs, barring the erection of signs overhanging the street, unless they are illuminated.

PRINCIPAL STEEL CAR CAR ORDERS OF THE WEEK.

Pennsylvania.—65 suburban passenger coaches and 10 combination baggage and passenger cars, Pressed Steel Car Company; 15 suburban coaches and 35 combination coaches, Standard Steel Car; 75 coaches, American Car & Foundry Company.

Grand Trunk.—500 automobile cars, divided between Western Car & Foundry Company and American Car & Foundry.

DOLLAR DROP IN STEEL.

Plates, Shapes and Bars Are Quotable at $1 Less at Pittsburgh.

PITTSBURGH.—Bars, plates and plain structural material can be had at 1.10c, Pittsburgh, on desirable business, either spot or future shipment, as against the reigning price of 1.15c, Pittsburgh mill, which represented the market during January.

This shading of $1 is made by independent mills almost altogether, the Steel Corporation being well filled for the present quarter and averse to taking on heavy obligations for second quarter at less than prompt quotations.

There has been considerable quiet buying at the lower figures for a week or 10 days. The decline is due largely to shading by Eastern mills which did not fill up on the recent buying movement and is in sharp contrast with the position of the larger local interests, the Carnegie Company being fully sold up on the basis of its finishing capacity in these lines and short of steel to keep such finishing mills operating.

The Carnegie Company is reputed to have no less than 100,000 tons of open-hearth rails on its books for export, and on this and other accounts has withdrawn from the export market on billets and sheet bars, while lately it has sold no such material in the local market.

Work on Buckhannon R. R. Link.

Work has been started on the grading on the Greene county (Pa.) side of the Pennsylvania-West Virginia State line, near Morgantown, for the extension of the Monongahela railroad from Martin to the West Virginia-Pennsylvania state line where it connects with the Buckhannon & Northern Railroad.

Range of Weekly Quotations of Pig Iron

PIG IRON	Feb. 10	Feb. 3.	Jan. 27.	Jan. 20.	Jan. 13.	1912. Jan. 6.	1911. Dec. 30
At Pittsburgh—							
Bessemer	14.90@15.15	14.90@15.15.	14.90@15.15	15.15	15.15	15.15	15.15
Basic	13.15@13.60	13.15@13.60	13.35@13.40	13.40@13.65	13.35@13.40	13.40	13.40
No. 1 Foundry	14.90	14.90	14.90	14.90	14.90	14.90	14.50
No. 2 Foundry	13.90@14.15	13.90@14.40	13.90@14.40	13.90@14.40	13.90@14.40	13.90@14.15	13.90@14.15
Malleable	13.90	13.90	13.90	13.65@13.90	13.65@13.90	13.65	13.65
Gray Forge	13.40	13.40@13.65	13.40@13.65	13.40@13.65	13.40@13.65	13.40@13.65	13.40@13.65
Low Phosphorus	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00
Ferro Silicon, 50 per cent	68.00@70.00	68.00@70.00	68.00@70.00	70.00	70.00@71.00	70.00	70.00
Ferro Silicon, 10 per cent	21.90@22.40	21.90@22.40	22.40@22.90	22.40@22.90	22.90	22.90@23.90	22.90@23.90
Silicon Spiegel, 10 to 12 per cent	22.40@23.90	22.40@23.90	23.40@24.90	23.40@24.90	23.40@24.90	24.40	24.40
Spiegeleisen	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50
Ferro Manganese	42.45@42.95	42.45@42.95	42.70@42.95	42.70@42.95	42.95	41.95	41.95
At Virginia Furnaces—							
Basic	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. 1 X	13.00	13.00	13.00	13.00	13.00	13.00	12.75
No. 2 X	12.00@12.50	12.00@12.50	12.25@12.50	12.25@12.50	12.25@12.50	12.25@12.50	12.25
No. 2 Plain	12.00@12.50	12.00@12.50	12.00@12.50	12.00@12.50	12.00@12.50	12.00@12.50	12.00@12.25
Gray Forge	12.00	12.00	12.00	12.00	12.00	12.00	12.00
At Birmingham—							
No. 1, Foundry	10.75@11.00	10.75@11.00	10.75@11.00	10.75@11.00	10.75@11.00	10.75@11.00	10.75@11.00
No. 2, Soft	10.25	10.25	10.00@10.25	10.00@10.50	10.00@10.50	10.25@10.50	10.00@10.50
No. 2, Foundry	10.25	10.25	10.00@10.25	10.00@10.50	10.00@10.50	10.25@10.50	10.00@10.50
No. 3, Foundry	9.50@9.75	9.50@9.75	9.50@9.75	9.50@9.75	9.50@9.75	9.50@9.75	9.50@9.75
No. 4, Foundry	9.50	9.50	9.50	9.50	9.50	9.50	9.50
Gray Forge	9.25@9.50	9.25@9.50	9.25@9.50	9.25@9.50	9.25@9.50	9.25@9.50	9.50
At Philadelphia—							
No. 2X Foundry	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25
Basic	14.25@14.50	14.25@14.50	14.50	14.50	14.50	14.50	14.50
Gray Forge	14.25	14.25	14.25@14.50	14.25@14.50	14.25@14.50	14.25@14.50	14.25@14.50

STEEL.							
Tons of 2240 lbs., at Pittsburgh—							
Bessemer Billets	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Open Hearth Billets	20.00	20.00	20.00	20.00	20.00	26.00	20.00
Forging Billets	27.00@28.00	27.00@28.00	27.00@28.00	27.00@28.00	26.00@28.00	26.00@28.00	26.00
Sheet and Tin Bars	21.00	21.00	21.00	21.00	21.00	21.00	21.00
Bessemer Steel Rails	28.00	28.00	28.00	28.00	28.00	28.0	28.00
Open-Hearth Steel Rails	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Light Steel Rails—							
25 to 45 lbs.	25.00	25.00	25.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00
16 and 20 lbs.	25.00	25.00	25.00	26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00
12 and 14 lbs.	26.00	26.00	26.00	28.00	28.00	28.00	28.00
Bessemer Wire Rods	25.00	25.00	24.50@25.00	24.50@25.00	24.00@25.00	24.50@25.00	24.50@25.00
Open Hearth Wire Rods	25.00@25.50	25.00@25.50	24.50@25.00	24.50@25.00	24.00@25.00	25.00	25.00
Muck Bar, all pig iron	28.00	28.00	28.00	28.00@28.50	28.00@29.00	28.00@29.00	28.00@29.00

FINISHED PRODUCTS.							
Tons of 2000 lbs., at Pittsburgh—							
Skelp Steel Grooved	23.00@24.00	23.50@24.00	23.50@24.00	23.50@24.00	23.50@24.00	23.50@24.00	23.50@24.00
Skelp Steel Sheared	24.00@24.50	24.00@24.50	24.00@24.50	24.00@24.50	24.00@24.50	24.00@24.50	24.00@24.50
Railroad Spikes	28.00	28.00	28.00	28.00	28.00	28.00	28.00
Sheets, No. 28	37.00@40.00	37.00@40.00	38.00@40.00	38.00@40.00	38.00@40.00	38.00@40.00	38.00
Galvanized Sheets, No. 28	57.00@60.00	57.00@60.00	58.00@60.00	58.00@60.00	58.00@60.00	58.00@60.00	58.00
Beams, 3 to 15 inches	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00
Beams, over 15 inches	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00
Channels, 3 to 15 inches	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00
Channels, over 15 inches	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00
Tees, 3-inch and larger	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00
Zees, 3-inch and larger	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00
Angles, 3 to 6 inches	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00
Angles, over 6 inches	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00
Tank Plate	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00
Boiler Plate	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00
Hoops	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00
Bands	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00
Bessemer Steel Bars	22.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00	23.00
Open Hearth Steel Bars	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00	23.00
Common Iron Bars	25.00@25.50	25.50@26.00	25.50@26.00	25.50@26.00	26.00	25.00	25.00

and Various Finished Iron and Steel Products.

Dec. 23.	Dec. 16.	Dec. 9.	Dec. 2.	Nov. 25.	Nov. 18.	Nov. 11.	Nov. 4.	Oct. 28.	1911. Feb. 11.
15.15	15.15	15.15	15.15@15.40	15.15@15.40	15.15@15.40	15.15@15.40	15.15@15.40	15.40	15.90
13.40	13.40	13.40	13.40	13.40	13.40	13.40	13.40	13.40	14.40@14.65
14.50	14.50	14.50	14.75	14.75	14.75.	14.75	14.15@14.40	14.75	15.15@15.40
13.90@14.15	13.90@14.15	14.15	14.15@14.40	14.15	14.00@14.15	14.15@14.40.	13.40@13.90	14.40	14.90
13.65	13.65	13.40@13.65	13.40	13.40	13.50@13.70	13.40	13.40@13.65	13.90	14.40@14.65
13.40@13.65	13.40	13.40@13.65	13.40@13.65	13.40	13.40	13.40@13.50	13.40@13.65	13.65	14.15
21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	21.00@22.00	20.00
70.00	68.00@70.00	65.00@66.00	65.00@66.00	65.00@66.00	64.00@65.00	64.00	60.00@62.00	59.00@60.00	55.00@56.00
22.90@23.90	23.90	23.90	23.90	23.90	23.90	23.90	23.90	23.90	24.90
24.40	24.40	24.90	24.90	24.90	24.90@25.90	24.90@25.90	24.90	24.90	25.00@26.00
21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	21.50@22.50	22.50@23.50	23.90@25.90
40.45	40.45	39.45@40.45	39.45@40.45	39.45@40.45	39.95@40.45	39.95@40.45	38.95@40.45	38.95@40.15	36.95@40.45
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.25@12.50	12.25@12.50	12.50@13.00
12.75	12.75	12.75	12.75	12.75	12.75	12.75	12.75	12.75	13.75@14.00
12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25@12.50	12.25@12.50	12.50@12.75
12.00@12.25	12.00@12.25	12.00@12.25	12.00@12.25	12.00@12.25	12.00@12.25	12.00@12.25	12.25@12.50	12.25@12.50	12.50@12.75
12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.75	11.75	11.75@12.25
10.75@11.00	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	12.50@13.00
10.00@10.25	9.75	9.75	9.50@10.00	10.00	10.00	10.00	10.00	10.00@10.25	10.75@11.00
10.00@10.25	9.75	9.75	9.50@10.00	10.00	10.00	10.00	10.00	10.00@10.25	10.75@11.00
9.50@9.75	9.50@9.75	9.50@9.75	9.00@9.75	9.50@9.75	9.50@9.75	9.50@9.75	9.50@9.75	9.50@10.00	10.25@10.75
9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	10.25
9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	10.00
15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25	15.00@15.25
14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.25@14.75	14.25@14.75	14.50@14.75
14.25@14.50	14.25@14.50	14.25@14.50	14.25@14.50	14.25@14.50	14.25	14.25	14.00@14.25	14.00@14.25	14.00@14.25

19.00@19.50	19.00@19.50	19.00@19.50	19.00@19.50	19.50@20.00	20.00	20.00	20.00	20.00	23.00
19.00@19.50	19.00@19.50	19.00@19.50	19.00@20.00	19.00@20.00	19.00@20.00	20.00	20.00	19.00	23.00
25.00	24.00@25.00	24.00@25.00	24.00@25.00	24.00	24.00	24.00	24.00	24.00	27.00@28.00
20.00@21.00	20.00@20.50	20.00@20.50	19.50@20.50	20.00@20.50	20.00@21.00	20.00@21.00	20.00@21.00	20.00@21.00	24.00
28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00	25.00@26.00
26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00	26.00@27.00
28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
25.00	25.00	25.00	25.00	25.00	25.00@25.50	26.00	26.00	26.00	29.00
25.00	25.00	25.00	25.00	25.00	25.00@26.00	26.00	26.00	26.00	28.00@29.00
28.00@28.50	27.00@28.00	27.00@28.00	28.00@29.00	28.00@29.00	28.00@28.50	28.00@28.50	28.00@28.50	28.00@28.50	29.00@30.00

23.50@24.00	23.50@24.50	23.50@24.50	23.00@23.50	23.00@23.50	23.00@23.50	25.00	25.00	25.00	26.00
24.00@24.50	24.00	24.00	23.50@24.00	23.50@24.00	23.50@24.00	27.00	27.00	27.00	27.00
28.00	28.00	28.00	28.00	28.00	28.00	28.00@29.00	28.00@29.00	28.00@29.00	31.00
38.00	37.00@38.00	37.00@38.00	37.00@38.00	37.00@38.00	37.00@38.00	37.00@38.00	37.00@38.00	37.50@38.00	44.00
58.00	57.00@58.00	57.00@58.00	57.00@58.00	57.00@58.00	57.00@58.00	57.00@58.00	57.00@58.00	57.00@58.00	62.00@64.00
25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	28.00
26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	29.00
25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	28.00
26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	29.00
25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	28.00
26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	26.50@27.00	29.00
25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	28.00
25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	25.50@26.00	29.00
24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	24.00@26.00	28.00
25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	25.00@27.00	30.00
27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	30.00
23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	23.00@24.00	29.00
23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	28.00
23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	22.00@23.00	28.00
25.00	24.00	24.00	24.00	24.00	24.00	24.00@25.00	24.00@25.00	24.00@25.00	27.00@28.00

Detail Prices on Finished Product in Iron and Steel.

STEEL PLATES.

Base prices, tank quality, ¼-inch thick, per 100 lbs., f. o. b. Pittsburgh:
0¼ to 100 inches wide $1.25 $1.30

Extras over base price—

3/16-inch thick	.10
Gauges 7 and 8	.15
Gauge 9	.25
Gauges 10 and 11	.25
Circles	.20
Sketches	.10
Boiler and flange quality	.10
Marine steel	.40
Widths over 100, to 110 in.	.05
Widths over 110, to 115 in.	.10
Widths over 115, to 120 in.	.15
Widths over 120, to 125 in.	.25
Widths over 125, to 130 in.	.50
Widths over 130 in.	1.00

IRON AND STEEL SCRAP.

Old steel rails, re-rolling	$12.50	$13.00
Old steel rails, re-melting	12.50	13.00
Steel axles	16.00	16.50
Heavy melting scrap	12.50	12.75
Low phosphorus	15.00	15.50
Sheet scrap	10.75	11.00
No. 1 wrought scrap	13.00	13.75
Machine shop turnings	9.25	9.75
Cast borings	9.25	9.75
No. 1 cast	12.25	12.50
Old car wheels	12.75	13.00
Old iron rails	15.00	15.25
Railway Malleable	12.00	12.25
Iron car axles	21.50	22.50

TIN AND TERNE PLATES.

Open market, f. o. b., Pittsburgh—

Coke tins:	
14x20, 100 lbs.	$3.40
14x20, 95 lbs.	3.35
14x20, 90 lbs.	3.35
Charcoal tins:	
A grade, 14x20, I. C.	4.40
A grade, 14x20, 100 lbs.	4.25
Ternes:	
20x28, I. C.	6.60
20x28, 200 lbs.	6.30

STEEL RAILS.

Fifty pounds and heavier—	
500-ton lots and over	$28.00
Car load lots	30.00
Less than car load lots	32.00
Light rails—	
12 pounds	26.00
16, 20 and 25 pounds	25.00
30 and 35 pounds	25.00
40 and 45 pounds	25.00
Relaying rails—	
Subject to inspection, f. o. b., Pittsburgh:	
Standard 50 lbs. & heavier	$22.00 $23.00
25 to 40 lbs.	22.00 22.50
16 to 20-pound rails	22.00 22.50

STEEL SHEETS.

Open market, per 100 lbs., f. o. b. Pittsburgh—

Gauge.	Black	Galv.
30	$2.05	$3.25
29	1.95	3.00
28	1.90	2.90
27	1.85	2.75
25–26	1.80	2.60
22–24	1.75	2.40
17–21	1.70	2.30
15–16	1.65	1.95
13–14	1.60	1.95
Blue Annealed.		
10 and heavier	$1.40	$1.45
11–12	1.45	1.50
13–14	1.50	1.55
15–16	1.60	1.65

Corrugated Roofing.

Per square, 28 gauge, f. o. b., Pittsburgh—

Painted	$1.35	
Galvanized	2.50	$2.55

WIRE AND NAILS.

Prices to jobbers in car load lots, per 100 lbs., retailers 5 cents additional:

Wire nails	$1.60
Plain wire	1.40
Painted barbed wire	1.60
Galvanized wire	1.90

ALUMINUM PRICES.

No. 1 ingots, guaranteed over 99 per cent pure are held at 24c per pound in ton lots.

For small lots of 100 pounds and over advances of 3c per pound are charged.

Rods and wire .....base price 31 cents
Sheets .....base price 33 cents

BITUMINOUS COAL PRICES.

Pittsburgh district, f. o. b. mine—

	Per Ton
Mine-run	$1.15@1.25
¼-inch	1.25@1.35
1¼-inch lump	1.35@1.45
Slack	.65@ .75

At Cleveland—	Pgh.	Ohio No 8
Mine-run	$2.13	$1.95
¼-inch	2.23	2.05
1¼-inch lump	2.33	2.15
Slack	1.63	1.40

At Buffalo—	Pgh.	Free-port.
Mine-run	$2.40	$2.10
¼-inch	2.50	2.20
1¼-inch lump	2.60	2.30
Slack	1.90	1.60

At Detroit—	Pgh.	Ohio No. 8
Mine-run	$2.55	$2.25
¼-inch	2.65	2.35
1¼-inch nut	2.75	2.45
Slack	2.05	1.60

At Chicago—	Pgh.	Ohio No. 8
Mine-run	$3.05	$2.75
¼-inch	3.15	2.85
1¼-inch nut	3.25	2.95
Slack	2.55	2.20

MERCHANT PIPE.

Base discounts, car load lots, subject to the usual variation of 5 per cent:

	Black Butt.	Black Lap.	Galvanized Butt.	Galvanized Lap.
⅛, ¼ inch	73	..	53	..
⅜ inch	74	..	64	..
½ inch	77	..	67	..
¾ to 1½ inch	80	..	72	..
2 inch	81	77	74	70
2½ to 3 inch	81	79	74	72
4½ to 6 inch	..	78	..	70
7 to 12 inch	..	76	..	66
Extra strong plain ends—				
⅛ to ⅜ inch	70	..	60	..
½ inch	75	..	69	..
¾ to 1½ inch	79	..	73	..
2 inch	80	76	74	70
2½ to 4 inches	..	78	..	72
4½ to 6 inches	..	77	..	71
7 to 8 inches	..	70	..	60
9 to 12 inches	..	65	..	55

The above steel pipe discounts are for "card weight." Less than carloads to destinations east of the Mississippi, two points lower.

WROUGHT IRON PIPE.

Full weight genuine wrought iron pipe car load prices to consumers; prices to jobbers one point and 5 per cent.

	Butt. Black	Butt. Galv.	Lap. Black	Lap. Galv.
⅛, ¼ inch	68	48	..	..
⅜ inch	68	58	..	..
½ inch	71	61	..	..
¾ to 1½	75	67	..	..
2 and 2½ inch	76	69	..	..
2 inch	..	..	71	63
2½ to 4 inch	..	..	74	67
4½ to 6 inch	..	..	73	65
7 to 12 inch	..	..	71	61

Extra Strong Plain Ends.

	Butt.	Butt.	Lap.	Lap.
⅛, ¼, ⅜ inch	65	55	..	..
½ inch	70	64	..	..
¾ to 1½ inch	74	68	..	..
2 and 2½ inch	75	69	..	..
2 inch	..	..	71	65
2½ to 4 inch	..	..	73	67
4½ to 6 inch	..	..	72	66
7 to 8 inch	..	..	65	55
9 to 12 inch	..	..	60	50

Double Extra Strong Plain Ends.

½ inch	60	54	..	..
¾ to 1½ inch	63	57	..	..
2 and 2½ inch	65	59	..	..
2 inch	..	..	61	55
2½ to 4 inch	..	..	63	57
4½ to to 6 inch	..	..	62	56
7 and 8 inch	..	..	55	45

MERCHANT STEEL.

Cold rolled and ground shafting, 55 per cent off, car load lots; 50 per cent off less than car load lots; delivered in base territory:

Planished tire steel	$1.30@1.40
Iron finish, up to 1½x½ in.	1.35@1.45
Iron finish, 1½x½ in. and over	1.20@1.30
Toe calk steel	1.70@1.80
Railway spring steel	1.70@1.80
Cutter shoe	1.95@2.05
Flat sleigh shoe	1.55@1.65
Crucible tool steel	7.00@8.00
Open hearth spring steel	2.05@2.30

Freight Rates on Pig Iron, Finished Steel, Coal and Coke

PIG IRON.

Pig iron, from Virginia furnaces to	Pgh.	Cin.	St. L.	Chi.	Phil.	N. Y.	Bos.
Shenandoah	$2.50	$2.35	$3.60	$3.20	$2.35	$3.30	$3.35
Bristol	4.35		3.75	4.10	3.60	4.55	4.60
Buena Vista and Roanoke	2.90	2.35	3.60	3.20	3.00	3.95	4.00
Kayula, Ivanhoe, Rural Retreat	2.90	2.35	3.60	3.20	3.40	4.35	4.40
Pulaski, E. Radford, Max Meadows.	2.90	2.35	3.60	3.20	3.25	4.20	4.25

Pig iron from Birmingham, Ala., tons of 2,240 lbs., to—	
Boston, by water	$4.60
Chicago	4.35
Cincinnati and Ohio river	3.25
Cleveland	4.35
Milwaukee and Northwest	4.75
New York, all rail	5.95
New York, rail and water	4.25
Philadelphia, all rail	5.00
Philadelphia, rail and water	4.00
Pittsburgh	4.90
St. Louis	3.75
To Pittsburgh from—	
Dunbar furnaces	.85
Kittanning furnaces	.60
Scottdale furnaces	.85
Valley furnaces	.90
Wheeling	.90
Valley furnaces to—	
Cleveland	.90

PIG IRON AND BILLETS.

Pittsburgh to	Pig iron.	Billets.
Baltimore	$2.15	$2.30
Buffalo	1.75	1.80
Boston	2.85	3.00
Chicago	2.80	3.00
Cincinnati	2.20	2.40
Cleveland	1.40	1.50
Columbus	1.60	1.90
Dayton	1.85	2.20
Detroit	2.15	2.25
Erie, Pa.	1.40	1.50
Indianapolis	2.20	2.65
Louisville, Ky.	2.80	3.00
New York	2.45	2.60
Philadelphia	2.25	2.40
Portsmouth, O.	2.10	2.50
Rochester	1.80	1.90
Richmond, Va.	2.65	2.80
Syracuse	2.10	2.20
St. Louis	3.50	3.80
Steubenville	.80	.90
Toledo	1.75	1.95
Wheeling, W. Va.	.90	1.00
Youngstown	.90	1.00
To Pittsburgh from—		
Mahoning and Shenango valleys	1.00	
Wheeling	1.00	

COKE.

From Connellsville region, per 2,000 pounds, to—	Fur.	Fdry.
Buffalo	$1.65	$1.90
Baltimore		2.15
Cleveland		1.65
Columbus		1.65
Cincinnati		2.10
Chicago		2.50
East St. Louis		2.80
Hamilton, Ont.		2.20
Joliet		2.65
Louisville		2.65
New York		2.85
Pittsburgh	.75	.80
Philadelphia		2.15
Richmond, Va.		2.95
Toledo	1.95	2.25
Valley furnaces	1.35	
Milwaukee	2.55	2.75
Detroit	2.10	2.25

TIN PLATE.

Per 100 lbs., Pittsburgh to—	C.L.	L.C.L.
Boston, Mass	18	21
Albany, N. Y.	16	19
Baltimore, Md.	14½	17½
Birmingham, Ala.	41	68
Cleveland, O.	10	13
Columbus, O.	12	15
Cincinnati, O.	15	18
Concord, N. H.	18	21
Charlotte, N. C.	39	61
Charleston, S. C.	33	70
Charleston, rail and water.	23½	31
Covington, Ky.	15	18
Chattanooga, Tenn.	33	65
Chicago, Ill.	18	21
Canadaigua, N. Y.	13½	16
Des Moines, Ia.	37½	48½
Detroit, Mich.	15	18
Denver, Colo.	84	1.18
Dover, Del.	17	20
Buffalo, N. Y.	11	13
East St. Louis	22½	26
Hartford, Conn.	18	21
Indianapolis, Ind.	17	19½
Louisville, Ky.	18	21
Montpelier, Vt.	21	24
Minneapolis, Minn.	32	42
New York	16	19
Norfolk, Va.	20	24
Natchez, Miss.	32	61
Portland, Me.	18	21
Providence, R. I.	18	21
Philadelphia, Pa.	15	18
Richmond, Va.	20	24
Rochester, N. Y.	11½	13½
Syracuse, N. Y.	13½	16
St. Louis, Mo.	22½	26
Terre Haute, Ind.	18	21
Topeka, Kan.	54½	68
Trenton, N. J.	16	19

FINISHED PRODUCTS.

Finished steel products, including plates, structural shapes, merchant steel and iron bars, skelp, pipe, fittings, hoop and cotton ties, plain and galvanized wire nails, rivets, spikes and bolts (in kegs), black plates, except planished, chain, etc., per 100 lbs.:

Pittsburgh to—	
Albany	.16
Buffalo	.11
Boston	.18
Baltimore	.14½
Canadaigua	.13½
Cleveland	.10
Columbus	.13
Cincinnati	.15
Chicago	.18
Harrisburg	.14½
Louisville	.18
New York	.16
Norfolk	.20
Philadelphia	.15
Rochester	.11½
Richmond	.20
Scranton	.15
St. Louis	.23
Washington	.14½
To Pittsburgh from—	
Mahoning and Shenango valleys	.05
Wheeling	.05

COAL.

Coal rates from mines—		
To Ashtabula		$1.00
To Allegheny, Pan Handle Ft. Wayne tracks		.43
To Allegheny, West Penn tracks		.48
To Allegheny, B. & O.		.35
To Pittsburgh, P. R. R. Main Line.		.40
To Pittsburgh, B. & A. V. Div.		.48
To Pittsburgh, B. & O.		.33
To Valleys		.70
To Buffalo		1.25
To Cleveland		1.00
To Detroit		1.40
To Chicago		1.90
To New York, gross ton		2.25
To Philadelphia, gross ton		2.00
From Freeport—		
To Buffalo		1.10
For Lake shipments—	Cargo.	Fuel.
To Ashtabula	.88	.98
To Cleveland	.88	.98
To Erie	.88	.98
West Virginia rates from mines—		
To Chicago		1.90
To seaboard points, gross ton		1.80
From No. 8, of Ohio—		
To Cleveland		.98
To Chicago		1.65
To Detroit		1.15

NEW CONSTRUCTION AND EXTENSIONS

Foundry and Machine.

Chester, Pa.—Daniel C. Eagan, son of the late Daniel Eagan who was head of the American Steel Casting Company before it was absorbed by the American Steel Foundries, is the head of a new concern, the Eagan-Rogers Steel & Iron Company, with capital of $100,000 which is to locate at Chester. Company has secured 5-acre tract for manufacture of light castings and specialties.

Nashville, Tenn.—Tennessee charter has been granted Southern Foundry & Machine Company, of Henderson county; capital $10,000. Incorporators are A. E. Beasley, C. C. Gathings, T. A. Lancaster, W. H. Lancaster, John S. Fielder, John F. Logan, W. T. Watson, J. W. Stewart and J. F. Boswell.

Dayton, O.—New foundry buildings of Kramer Brothers Company, Kiefer street, and C. H. & D. Railway are completed. Foundry is for production of window sash weights exclusively, scrap being principal melt. Equipment is being installed.

Nashville, Tenn.—William J. Lyles, Jr., of Middleton, O., has decided to establish a $200,000 plant in Nashville for the manufacture of malleable iron and steel castings. A small amount of local capital is to be raised.

Coal Mining, Coke, Etc.

Kaylor, Pa. (Armstrong county) — Operating officials of the Great Lakes Coal Company and local officials of the Western Allegheny Railroad Company, at a meeting here, passed on new policies and plans for the coming season. Coal company officials promise additional improvements at mines in this section.

Scotch Valley, Pa. — Beaver Valley Coal Company is installing 500-ton coal breaker. Contract let to H. F. Christ, Mahanoy City, Pa.

Burgettstown, Pa.—A two-story brick general store building is contemplated by the Atlas Coal Company, Oliver building, Pittsburgh, plans for which will be furnish by Engineer Smith Lewis, 1445 Oliver building, Pittsburgh.

Machinery and Tools.

Cleveland, O.—The Ohio Blower Company is to put up a new factory and office building on Ivanhoe road. Moore Engineering Company are drawing plans. The building will be two stories in height and cost $30,000.

Iron and Steel.

Portsmouth, O.—H. H. Hossman, contracting engineer, Masonic Temple, Portsmouth, has contract for construction of a blast furnace at Lynchburg, Va., for the Oriskany Ore & Iron Company. The furnace complete will cost $300,000. Preliminary plans are complete, and structural work is to begin immediately.

Donora, Pa—Agents of United States Steel Corporation have purchased sites adjoining present Carnegie mills here for extensive additions. Understood work will begin in spring on four additional open hearth furnaces. Vacation of several alleys and streets in West Columbia, adjoining Donora, has been secured.

Verona, Pa.—Contract has been awarded by McCance Brothers, of Pittsburgh, to Bollinger-Andrews Construction Company for the building complete of a manufacturing plant on a site recently secured in Verona for a modern galvanizing plant with commodious office building. It is expected to commence work immediately and the plant is to be ready for operation by June 1. Buildings will cost $125,000 exclusive of equipment.

Birmingham, Ala.—United States Cast Iron Pipe & Foundry Company plant at Bessemer will be improved and enlarged at a cost of about $150,000. This is in addition to an expenditure of $150,000 in rebuilding the Dimmick foundry at North Birmingham. The whole expenditure will be in the neighborhood of $300,000, all of which is in prospect this year. Before work begins on the Bessemer plant's improvements, the North Birmingham plant is to be completed and put in operation, and the contract for the practical rebuilding of the Dimmick plant, provides that the work must be completed by May 1 of this year. Riter-Conley Construction Company, Pittsburgh, are contractors on this work.

Pittsburgh.—Raymond Concrete Pile Company was awarded contract for concrete piles and foundations for iron and steel warehouse at Pittsburgh for the Frick & Lindsay Company; W. G. Wilkins Company, contractors and engineers.

Austin, Tex.—State government is considering plan by which the State iron furnace at Rusk penitentiary may be leased to New York capitalists who control 20,000 acres of iron ore in East Texas, situated in the counties of Anderson, Henderson and Cherokee on the lines of the International & Great Northern and Texas & New Orleans railroads. J. H. Hallock, of Syracuse, N. Y., and H M. Sellick, of Ontario, N. Y., were here and had several conferences with reference to leasing or buying the furnace at Rusk, which has long since been in disuse.

Columbus, O.—The Columbus Structural Steel Company contemplates the the erection of a templet shop 50x75 feet and a main building 100x150 feet, brick construction.

Dayton, O.—The Dayton Steel Construction Company has awarded the masonry contract for its new plant and warehouse, to Gowman & Shook, West Third street. The main building will be 80x120 feet, and warehouse 45x90 feet. Separate contracts are being awarded.

Washington, Pa. — Zahniser Brothers & Steen, whose plant was recently destroyed by fire, intend to rebuild at an early date, having private plans for a one-story steel building, with iron siding, 30x80 feet.

Hardware, Sheet Metal, Etc.

Hamilton, O. — American Scale & Tank Company, of Anderson, Ind., will remove to Hamilton. Company will at once begin moving into the former MacNeale & Urban safe plant buildings, in West Hamilton. The company's plant at Anderson was entirely destroyed by fire one week ago.

Moundsville, W. Va. — Additional buildings have been acquired for additions to the Stewart Chemical Company's plant, now the property of the Ohio Valley Enamel & Stamping Company, of Bellaire, O.

Uniontown, Pa. — George H. Bruder, president of Model Typewriter Company, of Harrisburg, reports to local stockholders in the matter of moving the machinery here and building a factory at Uniontown, that plans and specifications for the factory building were to have been completed and sent here some time ago, but the work has not been completed.

Cincinnati, O. — Site at Reading Road and Dorchester street, for a manufacturing building, has been acquired by Mitchell-Connor Manufacturing Company, a new incorporation, which will make a reversible window and other hardware specialties. Company intends building a temporary factory at first, and eventually this will give way to a power building of perhaps five or six stories. The lot is 93 by 174 feet. A. R. Mitchell is secretary; R. H. Cadwell, vice president, all of Cincinnati.

Youngstown, O.—General Fireproofing Company, at annual meeting, adopted plans for addition to plant, for use of steel furniture department. Addition is to be 4-stories, fireproof. Contracts not

let. W. H. Foster, president; R. M. Bell, secretary.

Portsmouth, O. — Canning factory at Fullerton, Ky., has been purchased by A. Brickey, of Portsmouth. May be removed here.

Parkersburg, W. Va.—Vitrolite Company secured large contract from National Cash Register Company for enameled plates, and is installing new machinery. Plans for plant addition under consideration.

Lansdale, O.—A movement has started in Lansdale to have the A. H. Fox gun factory, of Jenkintown locate here.

Cincinnati, O.—Cincinnati Fly Screen Company, secured authority from the Secretary of State to increase its capital from $1,000 to $60,000. This company, of which H. H. Suydam is the president, was recently purchased by Suydam and associates, and the new capital is to be used for enlargements and expanding the business.

Bridge and Structural.

Cincinnati, O. — The Siegman Construction Company, with general offices in the Gerke building, Cincinnati, has been incorporated under the laws of West Virginia to do a general construction business. The capital is $50,000, half of which is preferred stock. The incorporators are: J. J. Siegman, Eugene Boudot, H. Gerwing, Cincinnati; Charles J. Kinke, Newport, Ky.; William A. Hicks, Madisonville, O.

Chicago. — A bridge three miles long and costing $4,500,000, will be constructed across the Ohio river at Paducah, Ky., by the Frisco, Louisville & Nashville, Illinois Central and Burlington railroads. The structure will be built by the Kentucky & Illinois Bridge Company, a corporation formed by the four roads to carry out the undertaking. Engineers are at Paducah perfecting their plans, and it was announced that construction will be begun as soon as possible.

Cincinnati—Southern Ohio Iron Works Company, received contract for shipping platform, Norwood, O., for United States Printing Company, Norwood, O.

Harrisburg, Pa.—Central Construction & Supply Company, of Harrisburg, filed notice at the State Department of an increase of capital stock from $46,000 to $57,000. Increase was voted at a meeting of the stockholders on January 26. The company some time ago voted an increase of its capital stock to $150,000 to be made from time to time as required, and its first increase was to $46,000. Frank B. Bosch, president of the company, said that the increase was made to meet the needs of the company. Company has bids in on several public works projects which will require considerable running capital.

Pittsburgh.—Jones & Laughlin Steel Company received contract for structural steel for store and office building, Fisk Rubber Company, Pittsburgh.

Toledo.—American Bridge Company, received contract for steel work on club building, for Inverness Club, Toledo, O.

Power, Hydro-Electric, Etc.

Noblesville, Ind. — C. R. Heath, president of the Noblesville Gas Company, has purchased the plant of the Tipton (Ind.) Gas Company the consideration being $50,000. It is the intention of the new company to invest $100,000 in an artificial gas plant at some convenient point between Noblesville and Tipton and supply both cities with artificial gas.

Greenville, Pa. — The Mercer Power Company contemplates the erection of a power plant and sub-station improvements. The sub-station will be of brick or concrete, with a steel truss roof, one-story, 40x40 feet.

Bowling Green, O. — The Universal Machine Company, Toledo, O., manufacturer of the Toledo marine engine, is removing to Bowling Green, where it expects to manufacture parts for the Modern Motor Car Company. The new factory has 22,000 feet of floor space.

Coshocton, O.—Brooks & Company, of Scranton, Pa., have purchased a controlling interest in the Coshocton Light & Heating Company, capital stock $550,000, which has been held by W. A. Himebaugh, of Coshocton. They already operate public service properties in several Ohio and Pennsylvania cities.

Public Works; Municipal, Etc.

Crooksville, O.—A special meeting of of the city council has been called for February 7, when a proposition for waterworks will be submitted by representatives of the National Waterworks Company of South Bend, Ind.

Phoenixville, Pa.—Plans for a 3,000,000 gallon filter plant with reinforced concrete reservoir and auxiliary pumping machinery have been submitted by Chester & Fleming, consulting engineers, Pittsburgh, in behalf of the borough of Phoenixville to the State Board of Health of Pennsylvania for approval.

Oberlin, O.—A. Elliott Kimberly, Columbus Savings & Trust Building, Columbus, will prepare plans for water softening plant for city of Oberlin. Work will consist of new filter beds, mixing tanks, etc.

Salem, O.—City has sold $55,000 sewage disposal bonds.

Berkley, W. Va.—A new jail building is to be built for the county authorities plans for which are held by the B. F. Smith Fireproofing Company, Washington, D. C.

Piqua, O.—Bond issue of $125,000 for new school building carried at special election January 30.

Homestead, Pa.—J. G. Unkefer, Minerva, O., who has the contract to build the postoffice building, is taking bids on all material for the new structure.

Cattlesburg, Ky. — Architect R. L. Day, Hotel Frederick, Huntington, W. Va., has plans for a stone and reinforced concrete court house building, for the Boyd County Commissioners. The building will be 82x82 feet.

Oberlin, O. — A. Elliott Kimberly, Columbus Savings & Trust building, Columbus, has been selected to prepare plans for a water softening plant for the City of Oberlin. The work will consist of new filter beds, mixing tanks, etc.

Railroad Structures.

Warwood, W. Va. — Specifications have been sent to all Wheeling contractors by the Pennsylvania for bids for new passenger and freight station, bids to be returned in 10 days. Structure will not cost less than $25,000 and will be one story, but covering much ground, containing two waiting rooms, ticket office, baggage room and freight depot.

Dayton, O. — The Oakwood Street Railway Company, a subsidiary of the American Railway Company, Philadelphia, is ready to let contracts on a car barn 115x180 feet; machine shop and carpenter shop 69x180 feet, paint shop 34x144 feet, office building, power house, etc. Bids on the general contract will be taken within 30 days. Brick and steel frame construction.

Port Perry, Pa.—The Union Railroad Company is having plans prepared by Architect T. H. Scott, Machesney building, Pittsburgh, for a five-story reinforced concrete office building, 42x87 feet.

Warehouses, Business Bldgs.

Covington, Ky.—Building permit was issued to the Houston, Stanwood & Gamble Company to erect a steel warehouse on Second street, between Philadelphia and Bakewell streets, to cost $1,000.

Mansfield, O. — A four-story steel and brick warehouse, is to be built for the Martin Hardware Company, plans for which will be prepared by Architect Vernon Redding, Bird building. The building will be 60x60 feet.

Pittsburgh. — Plans ready by Architect F. J. Osterling, Commonwealth building, for the 14-story bank and office building to be erected at Penn and

[illegible] ings & Trust Company. The building [illegible] feet.

Pittsburgh.—Bids are in on a wholesale warehouse on Ninth and Duquesne Way for the George A. Kelly Company. The building will be five stories, 100x124 feet, built of brick and reinforced concrete.

Pipe, Pipe Fittings.

New York City.—Bids will be received by the Board of Water Supply, 165 Broadway New York, Friday, February 23, for Contract 114, for furnishing and delivering 43 pressure-regulating valves, varying in size from 12 to 24 inches, for installation in connection with the city tunnel and the city pipe-lines of Catskill Aqueduct, in New York city.

Auto, Auto Accessory.

Cleveland, O. — E. J. Andrews, 7215 Lexington avenue, is asking sub-bids on the erection of a four-story brick and steel factory building, for the Stuyvestant Motor Company, on East Sixty-ninth street and Quincy avenue.

Pittsburgh.—Pittsburgh Motor Car Coimpany, 1109 Empire building, is asking sub-bids for erection of brick and stone factory building, 95x238, 4-stories, on Brushton avenue.

Concrete, Brick, Clay.

Tiffin, O. — An addition is to be built to the plant of the Great Westerin Pottery Company, which will be a one-story brick, with steel truss, building 46x80 feet.

Boilers, Power Plants, Etc.

Portsmouth, O. — The Shelby Shoe Company will erect a boiler house 50x50 feet, three stories, engine room 42x60 feet, one story, from plans prepared by Engineer B. S. Hughes, Commercial Tribune building, Cincinnati.

Miscellaneous.

St. Louis, Mo.—Antrim Lumber Company, St. Louis, has incorporated with $500,000 capital, to take over the St. Louis business of the Antrim Lumber Company, of Louisiana, and the properties of the Antrim-Todd Lumber Company, which operate retail lumber yards in Missouri and Oklahoma cities. Charles A. Antrim, Rush H. Todd, Amaziah H. Beardsley, Theodore C. Mann and George W. Castlen are incorporators.

Toledo, O.—Ohio Standard Chemical Company, backed by Toledo men, took out Ohio charter February 1, and will build plant at Silica, on the Toledo, Angola & Western Railroad, for which a site of 10 acres has been purchased. Buildings will cover six and a half acres; ultimate output 35,000 tons a year. Company is capitalized at $371,500; stock all subscribed. Construction of plant will be begun as soon as the ground thaws out sufficiently to be broken. The incorporators are Walter Morrow, O. S. Brumback, Harold Reynolds, George W. Shaw, Lee K. Forsythe, A. R. Kuhlman, George R. Ford and H. F. Robison. The factory will be under the active management of Mr. Forsythe. The product will be made of potash from Germany, phosphate from Tennessee and sulphuric acid, no reduction of garbage entering into the process.

Wilmington, Del. — Plant of Bond Bottling Sealing Company, at No. 501 Monroe street, is being engaged by the building of an addition to the rear of the building.

Urbana, O.—North American Chemical Company of Rome, Ga., will move to this city and locate its plant. Stewart Ross, one of the stockholders of the company, was in Urbana several days ago. T. E. Dye, of this place, was instrumental in securing the plant.

Hamilton, O.—Sterling Paper Company authorized the announcement that it will, in the immediate future, expend from $150,000 to $175,000 in additions to its Hamilton mill, which will triple the capacity of the plant and will give employment to approximately 50 additional workmen. Three buildings are to be erected. A five-story concrete stockhouse and a one-story concrete machine room are to be built between the present buildings and the river bank. A one-story finishing room, also of concrete, will be erected in front of the present mills, facing North Second street.

Charleston, W. Va.—Moore Construction Company, of Charleston, has secured the contract for the erection of a new plant of the Ashland Leather Company, of Ashland, Ky., $100,000.

Wilmington, Del.—Bond Bottle Sealing Company, 501 Monroe street, has broken ground for addition to plant. The building will be two stories in height. William D. Haddock & Company, contractors.

Rochester, Pa.—The Beaver Valley Pot Company, Walter Irwin, superintendent, will take bids on the erection of a brick and steel addition, 70x72 feet, three stories and basement.

Toledo, O.—The Acklin Manufacturing Company, Dorr street, will erect a brick and steel truss addition to its plant, bids on which will be taken in May next.

Moundsville, W. Va. — Architect Charles D. McCarty, Wheeling, has [illegible] two-story brick, steel and reinforced concrete factory building 80x220 feet for the Fostoria Glass Company. Bids will be taken next week.

Wheeling, W. Va. — Bloch Brothers Tobacco Company is having plans prepared by Architect C. D. McCarty for a four-story steel and reinforced concrete factory addition 100x100 feet. No time is set for taking bids,

Cleveland, O. — The Ulman-Philpott Company, 1592 Merwin avenue, has selected Architect Wilbur J. Watson, Citizens building, to prepare plans for a three-story and basement paint factory, to be built of brick and reinforced concrete.

Toledo, O.—Reduction plant of N. Russel Sons Company, which burned last week, will be rebuilt immediately. Address Wallace Gibbons, Cincinnati. The company, besides owning the reduction plant, also owns the West Toledo Cold Storage & Abbatoir Company and the Union Stock Yards.

Ellwood, Pa.—Buildings for the new Matthew Gravity plant will be ready for occupancy the coming week. Company is dismantling its plant at St. Paul, Minn., preparatory to removing machinery here. National Lumber & Construction Company, New Castle, has building contract.

Philadelphia.—Peerless Silk Hosiery Company, has had plans drawn for addition to plant, 45x90, four stories.

New York—Netedals Match Company a Norwegian corporation, will establish plant at Verplanck's Point, on the Hudson, near Peekskill, on tract of 250 acres. Total outlay for improvements is estimated at $1,000,000. Company announces it will build model town around its plant.

Martinsburg, W. Va.—The Kilbourne Knitting Company intends to erect a two-story brick, slow-burning addition to its plant, plans for which are being prepared by Architect Alex. Merchant, George street, New Brunswick, N. J. The building will be 50x100 feet.

Columbus, O. — Architects Richards, McCarty & Bulford, Hartman building, will soon start plans for a seven-story and basement shoe factory for the Realty Company. The building will measure 45x187 feet. Bids will be taken about March 1.

Celina, O.—A three story and basement packing plant will be built for J. A. Long & Company from plans prepared Architect Bert Moore, Portland, Ind. The building will be of brick fireproof construction 50x80 feet.

Bruin, Pa.—The High Grade Refining Company, Butler, will build a brick paraffine building from plans prepared by Engineer L. C. Reed, Bruin.

Wilkinsburg, Pa.—William Goldie and

Harry G. Suman have organized $150,000 company to build new ice plant of 100 tons daily capacity. Site 243x194 has been secured from Iron City Stone & Construction Company.

Carlisle, Pa.—Contract for erection of Sarah A. Todd Memorial Home for Old Ladies was awarded to Hemminger Brothers, of Carlisle, at $20,681. This was lowest of seven bids.

Cincinnati, O. — The Ohio Electric Railway Company is having plans made by Architect Thomas Elliott, Traction building, for four one-story brick and reinforced concrete buildings, to be used for car shops. Each building will be 150x200 feet.

Delaware, O. — The plant of the McKenzie Lumber Company, which was recently destroyed by fire, is to be rebuilt immediately. A stone, brick and frame building, 86x110 feet, will be built.

Akron, O. — The Opportunity Power Block Company has commissioned Architects Haglock & Potter, Flat Iron building, to prepare plans for a brick skeleton power building, 96x130 feet, four stories. The building will be used for light manufacturing purposes.

Canal Dover, O. — The Reeves Manufacturing Company will build an addition to its sheet mill 100x500 feet. The building will be of steel and concrete construction.

Findlay, O. — Plans for a brick and steel cigar factory will be taken about March 30, for the Deisel-Wemmer Company, North Main street, Lima, plans for which are being prepared by Architects McLaughlin & Hulsken, Central building, Lima.

Oakley, O. — Bids will be taken about the 12th inst. for erecting an addition to the plant of the Alvey Ferguson Company. The building as designed by the Allyn Engineering Company, Second National Bank building, Cincinnati, will be three stories and basement, 110x165 feet.

Canadian Construction.

[From "Canadian Foundryman."]

Bridgeport, Ont. — Tuttle & Braile Manufacturing Company will erect a foundry here.

Brampton, Ont.—Municipality will loan $43,000 to the Pease Foundry Company to assist them in locating here.

Port Arthur, Ont.—W. J. Lindsay is promoting a company which contemplates establishing here; will manufacture stoves and heating appliances. A $100,000 plant will be erected.

Hamilton, Ont.—Additions will be made to the plant of the Steel Company of Canada here, including two 50-ton open hearth furnaces, a 32-inch blooming mill, a continuous mill and a combination rod and bar mill.

Hamilton, Ont.—Hamilton Facing Mill Company recently sold and installed cupolas at the following plants: Waterous Engine Works Company, Brantford; Canadian Yale & Towne Company, St Catherines; Kerr Engine Company, Walkerville, and that of Thomas B. Angrove, Kingston, Ont.

Toronto, Ont.—Birmingham Brass & Manufacturing Company has been organized at 14 Markham street, Toronto, and has succeeded B. Johnson. In addition to manufacture of brass and iron goods, electrical contracting and metal pattern making will be specialties.

Sherbrooke, Que.—Sherbrooke Iron Works will build new shops on Belvidere street to occupy half of the land deeded by the city to the Canadian Brakeshoe Company. The buildings will cost between $15,000 and $20,000. Company will use 100 electric horse power.

Quebec, Que.—A new foundry has been established in Quebec, by F. X. Drolet. The building of steel and brick construction has a floor space of 75x100 feet, which is served on its castings section by a 10 ton, 40 feet span overhead traveler. The cupola and converter, which were supplied by the Baillot Company, Montreal, have a capacity of 15 tons per day. The cupola, elevator and charging arrangements are entirely exterior to the main building, the swinging channel from the former to the converter passing through the main wall of the building.

CHARTERS TO NEW CORPORATIONS

West Virginia.

Pinson Fork Company, Huntington; to mine coal and manufacture coke; $100,000. A. E. Bush, E. M. Watts, T. J. Bryan, Donald Clark, Z. T. Vinson, all of Huntington.

Grey Eagle Coal Company, Kermit, W. Va.; $60,000; to mine coal and manufacture coke in Mingo county. E. M. Lambert, Everett Leftwich, B. R. Bias, W. H. Walters and G. R. C. Wiles, all of Williamson.

J. W .Wright Company, Wriston; to do general mining and contracting business; $10,000. J. L. Vaughn, of Shawsville; J. W. Wright, of Wriston; A. B. Hunt, J. B. Vaughan, Abram P. Staples, Jr., of Roanoke, Va.

Kentucky.

Little Blaine Oil & Gas Company, Charley; $20,000. W. M. Chapman, W. T. Cain, L. S. Hayes, L. W. Spencer, B. J. Chaffin and M. M. Burgess.

Bates Roofing Company, Louisville; $600. James W. Bates, W. H. Bates and Clara Bates.

Gordon Mining Company, Madisonville; $1,000. William L. Gordon, Sr., Maurice K. Gordon and Glenn R. Eudaley.

Paducah Water Company, Paducah, extending duration of existence.

American Traction & Power Company, Wilmington, Del.; $500,000. F. M. Shive, S. E. Roberson and Harry W. Davis.

Delaware.

American Poured Concrete Steel Moulds Corporation; $50,000. Ralph Hoder, M. W. Guernsey and David Landau, all of Scranton, Pa.

The American Spring Tire Company, $500,000. Eugene Hogue, F. Herman Crampy, Charles H. DeVall, all of Chicago.

Pennsylvania.

Fow Manufacturing Company, Philadelphia; $15,000; buying selling manufacturing or dealing in tin, lead, copper, zinc and other metals and asbestos articles. Benjamin Fow, 2514 South Beulah street; Nathan Fow, 2522 South Sheridan street; Harry Fow, 1932 Stanley street; Frederick Fluck, 2303 South Twelfth street, all of Philadelphia.

Beaver Coal Company, Spangler, Cambria county, Pa.; $5,000; mining, buying, selling and shipping coal and coal products; D. B. Beaver, Pearl M. Beaver, William A. Crook, all of Spangler, Pa.

Waynesboro Brick & Supply Company, Waynesboro, Pa.; $50,000; manufacture brick and other articles of a like character. J. E. Beck, S. D. Hockman, A. R. Warner, all of Waynesboro.

Brilliant Cut Glass Company, Hawley, Wayne county, Pa.; $5,000; manufacturing glass, making articles used in making cut glass. W. B. Lindsay and Albert Roberts, Hawley, Pa.; R. Walter Garrett, Honesdale, Pa.

Builders' Home Supply Company, Shinglehouse, Potter county, Pa.; $10,000; dealing in rough and finished lumber, timber, cement, lime plaster and building materials. C. H. Cole, F. H. Failing, W. E. Slawson, C. C. Van De Boe, all of Shinglehouse, Pa.

Excelsior Brick Company, Rockwood, Somerset county; $5,000; brick, tiles, terra cotta and articles produced from clay. Harrison Snyder, Rockwood, Pa.; J. S. Miller, Rockwood, Pa.; W. H. Ruppel and D. B. Zimmerman, Somerset, Pa.

East Taylor Light, Heat and Power Company, East Conemaugh, Pa.; $5,000; furnishing light, heat and power in township of East Taylor. Howard Davis, C. B. Custer, M. J. Davis, all of East Conemaugh, Pa.

Railway & Industrial Engineering Company; $15,000. Treasurer, B. W. Kerr, 219 Swissvale avenue, Edgewood, Pa. Directors: A. W. Burke, Wilkins-

burg, Pa.; B. W. Kerr, Edgewood; F. R. Harbison, Tarentum, Pa.

Ruth Glass Company, Conshohocken, Montgomery county, Pa.; $15,000; manufacturing glass, articles made from glass. George Hastings, Lillie E. Ruth, Aaron L. Ruth, all of Conshohocken, Pa.

Point Marion Electric Company; $5,000. Treasurer: H. B. Smith, 109 Hutchinson avenue, Edgewood Park, Pa. Directors: H. A. Wieland, Bellevue, Pa; L. B. Custer, Wilkinsburg, Pa.; H. B. Smith, Edgewood Park, Pa.

Karthaus Fire Brick Corporation; $60,000. Treasurer: C. B. McCullough, Jersey Shore, Pa. Directors: C. B. McCullough, Jersey Shore, Pa.; J. H. Miller, Lock Haven, Pa.; Singleton Bell, Clearfield, Pa.

Pittsburgh Auto Lamp Repair Company, Pittsburgh, increase capital from $5,000 to $25,000. E. L. Atkinson, secretary.

Corry Brick & Tile Company, Warren, Pa., increase capital from $50,000 to $100,000. A. J. Hazeltine, secretary.

Conewago Township Water Company, Hanover, York county., increase capital from $5,000 to $30,000. E. D. Bistline, secretary.

Penn Township Water Company, York county (postoffice Hanover), increase capital from $5,000 to $80,000. E. D. Bistline, secretary.

Pittsburgh Washington Machine Company, Pittsburgh, increase capital from $5,000 to $50,000. James H. Muller, secretary.

Central Construction & Supply Company, Harrisburg, increase capital stock from $1,000 to $150,000. F. B. Bosch, president.

Philipsburg Electric Light Gas Power & Heating Company, Philipsburg, Pa., increase capital from $30,000 to $100,000; increase indebtedness from nothing to $100,000. John G. Platt, secretary.

Massachusetts.

American Mason Safety Tread Company, Boston; stair treads, flooring, etc.; $500,000. William S. Lamson, Lowell; Henry C. King, Cambridge.

Worcester Sand Lime Brick Company, Worcester; manufacture and sale of brick, artificial stone & building materials; $150,000. Richard C. Cleveland, L. Lincoln Powers, all of Worcester.

Boston Wrecking Company, Boston; general salvage business; $15,000. Oberlin S. Clark, F. Warren Clark, 30 Sydney street, Boston; Percy C. Bond, 23 Summit avenue, Somerville.

Transit Equipment Company, $10,000. E. E. McWhiney, William J. Maloney, and Norman P. Coffin, all of Wilmington, Del.

Ohio.

Hetzel Lighting & Heating Company, Dayton; electricity and steam heating; $5,000. Robert F. Hetzel, Thomas Elder, Robert J. Elder, William L. Fischer and E. C. Clancy.

Liberty Bell Company, Cleveland; electric call bells; $25,000. J. W. McClure, H. L. Hullinger, F. G. Niece, R. B. Skeels and E. R. Koontz.

Bac-2-lite & Automatic Switch Company, Dayton; automatic switch lights for automobiles, vehicles and boats; $30,000; Rodney W. Martin, Townsend S. Jordan, Opal M. Martin, Morris Wetzel and James C. Martin.

Union Boiler Works Company, Toledo; boilers, engines, machinery, etc.; $100,000. J. Mason Youngs, Edward Radbone, I. Allen Coby, U. S. G. Deaton, W. Finlay Radbone.

Blast Furnace Appliance Company, Cleveland; blast furnace tops and blast furnace appliances; $10,000. J. C. Cromwell, Arthur G. McKee, F. M. Deddy, M. B. Mooney, T. C. Jennings.

Kinsner Brothers Company, Cleveland; heating apparatus and appliances; $10,000. William Kinsner, Christ Kinsner, Charles Kinsner, Henry Steubel, Edward Kinsner.

Ohio Standard Chemical Company, Toledo; fertilizers(oils, greases, reduction and disposal of garbage; $371,500. Walter Morrow, George Shaw, Harvey Robison, Orville S. Brumback, George Ford, Harold Reynolds, Adam R. Kuhlman, Lee K. Forsythe.

The Kentucky Coal & Land Company, Cleveland; operating coal, mineral, oil and timber lands; $10,000. J. H. Pierong, M. A. Fanning, M. B. Glore, Thomas Davis, S. A. Hill.

White Tool & Supply Company, Cleveland; increase capital from $25,000 to $50,000.

M. E. Bertram Engine Company, Cleveland; gas engines for automobiles, motorcycles, motorboats, aeroplanes,

MANUFACTURING PURPOSES

The Sweeney Industrial Properties are located in the heart of the Niagara frontier, on the city of North Tonawanda, 20 minutes' run from Buffalo and Niagara Falls. We are at the foot of Lake navigation, and at the point where the 1,000-ton barge canal enters into the Niagara river, thus giving us water communication with New York City and the East, and Chicago and the West. We have some 20 different railroad connections. Niagara Falls electric power, natural gas, and are an up-to-date city of 25,000 people, and in close touch with Buffalo and other places, from which to draw labor. Floor space and manufacturing plants for rent. Will build for desirable tenants on long-time lease. New cement block factory, 70x300. All improvements. Railroad siding, two blocks from freight and express. Offices for rent from May 1, next. We solicit correspondence from manufacturers who are located in close, cramped quarters in cities, and ask them to look over our proposition, with a view of locating where conditions are very attractive. Write

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WANTED— 1 yard crane, about 75-foot span, 220 volt, 10-ton lift, with about 300 feet of runway. Address Industrial World, Box 10-A, 108 Smithfield St., Pittsburgh, Pa.

WANTED—New or second-hand equipment as follows:
One 12" or 14" engine lathe, with 12-foot bed, for automobile work and general use.
One 16" or 18" engine lathe, for heavy work, to take automobile axles.
One 20" upright drill complete.
One radial drill, for use on frame work, largest hole to be bored, estimated at 1¼".
One 25 H. P. twin cylinder gas engine.
One 25 kw. generator.
One electric drill (hand work).
One 16" or 18" lathe, 8-foot bed, to take about 5 feet between centers. Combination rest; power cross feed; back geared and hollow spindle.
One 22" or 24" drill press.
One 20" drill press, both hand and power feed.
One 24"x36" slide valve engine (left hand).
One 20"x36" Corliss engine (left hand).
One 600 H. P. Corcoran water heater (open type).
Address H, care Industrial World, Pittsburgh, Pa.

WANTED — Inquiries to purchase or sell iron, steel, metals, machinery, contractors' equipment, iron buildings, and bridges. Address Thomas J. Pope, 59 Beekman street, New York.

WANTED Second-hand large gear, about 4 feet or larger; about 4-inch bore; also smaller gears. Send list and prices. Address Potts Manufacturing Company, Camden, N. J.

POSITIONS WANTED

WANTED—Clean-cut Young Man, 24 years old, of good habits, appearance and address, exceptional ability and ambition, desires to connect with a first class concern as an all-around man, for either inside or outside work. Opportunity desired more than salary at present. Has technical and clerical experience as a draftsman and estimator, also spent some time in sales department as correspondence clerk and sales duties, with reputable concerns; excellent references. Address B, care Industrial World, Pittsburgh, Pa.

ASSISTANTS WANTED

WANTED—Assistant Purchasing Agent who has had experience in the iron and steel business. State experience, where last employed and salary expected. Address Box C, care Industrial World, Pittsburgh, Pa.

WANTED—Assistant Superintendent of Machine Department. One who has had experience in the building of engines and rolling mill machinery. State eperience, where last employed and salary expected. Address Box D., care Industrial World, Pittsburgh, Pa.

WANTED — Salesman for Cement Coated Wire Nails. Must have had experience. Give reference, name and salary. All communications strictly confidential. American Steel Company, Park Building, Pittsburgh, Pa.

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FOR SALE—240 acres of pink dolomite limestone, along the Baltimore & Ohio Railroad. For further information, call or write to G. W. Engle, Charles-Town, Jefferson county, W. Va.

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AIR COOLED AIR COMPRESSORS
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Write for catalogues and prices.
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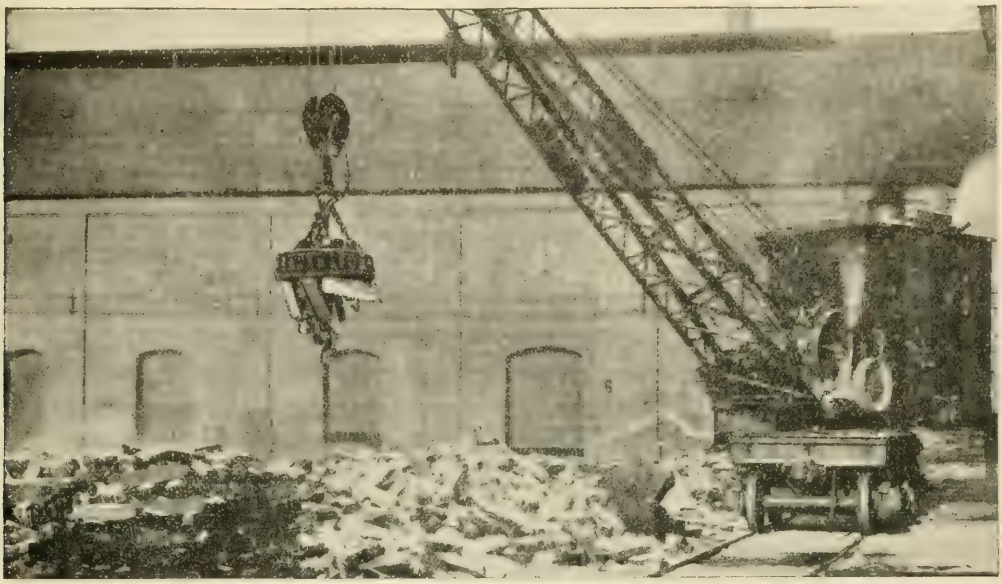


Photograph showing Cutler-Hammer 43 inch Lifting Magnet at Wisconsin Iron Co., Mayville, Wis. This Magnet is operated all seasons of the year in all kinds of weather.

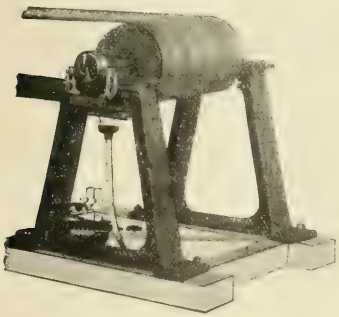
Cutler-Hammer Lifting Magnets Work in Rain, Sleet and Snow. The Only Magnet Ever Used for Submarine Salvaging

Magnets so rugged and water proof as to be able to fish up a boat load of kegged nails and wire fencing from the bottom of the Mississippi River can withstand any kind of weather or hard usage. And they have—"For over two years not a single complaint has been registered against the 'Mississippi' type Magnet."

A Cutler-Hammer Magnet (which does the work of a score of laborers, quicker and cheaper) can be worked in all kinds of weather,—weather which handicaps or prevents laborers from working. The operator is sheltered in the crane cab.

For use with locomotive cranes our 43-inch magnet (shown in illustration) is recommended. Our 36-inch magnet is especially suitable for skull-cracker work. Plants handling large quantities of pig iron and scrap daily, usually prefer the 52-inch size. We also make special magnets for handling plates, tubes, rails, etc.

Cutler-Hammer Magnets will increase your profits by decreasing the cost of handling your raw material. We will be glad to send you names of concerns that have found this out. Their repeat orders are proof.



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PACIFIC COAST AGENTS: Otis & Squires, 579 Howard St., San Francisco. 229 Sherlock Bldg., Portland, Ore.; W. B. Palmer, 416 East 3rd St., Los Angeles.

etc.; $30,000. H. E. Bertram, Alfred A. Guthrie, K. C. Smith, L. W. Kelley, A. C. Wallace.

Enos Taylor Boat & Barge Line Company, Stryker; transportation of logs, sand and gravel and all other merchandise; $20,000. Henry F. Bruns, Charles A. Bowersox, F. M. Bruns, H. B. Bruns, C. R. Bowersox.

Hercules Specialty Company, manufacturing stepladders, ironing boards, etc., Hamilton; $30,000. Mars E. Wellver, Walter S. Burress, H. R. Reigart, Theo. E. Bock, L. J. Ziliox.

D. G. Williams Company, Cincinnati; metals, etc.; $10,000. C. M. Jacobs, Jr., Leo J. Brumleve, Jr., P. Lincoln Mitchell, E. M. Meyers and F. L. Wendt.

Globe Plating Company, Mansfield; general plating; $10,000. S. E. Hoffman, Charles W. Crew, Harry K. Keil, Oliver White and I. F. Newcomer.

General Fireproofing Company, Youngstown; increase from $900,000 to $1,000,000.

Cleveland Metal Products Company, Cleveland; increase of capital from $200,000 to $1,000,000.

Jahant Heating Company, Akron; increase of capital from $30,000 to $50,000.

The Ohio Seamless Tube Company, Shelby; tubing and other articles made of steel; $1,500. A. C. Morse, G. M. Skiles, W. W. Van Horn, E. W. Wiggins and R. P. Bricker.

Augustine Rotary Power Company, Columbus; steam and internal combustion engines, power and transmission machinery and supplies; $500,000. Benjamin F. Augustine, John T. Moore, J. I. McCullough, A. E. Cather and D. B. Grubb.

Shartle Continuous Beater Company, Middletown; paper and paper mill machinery; $50,000. Charles W. Shartle, Lucy C. Shartle, H. D. Martindale, G. Kaffenberger and W. T. Harrison.

Euclid Oil Company, Cleveland; oils, greases, scraps, etc.; $10,000. Samuel Heimlick, James R. Miller, W. E. Harpester, Frank J. Yeager and H. J. Freiberger.

Canton Broom & Brush Company, Canton; brooms, brushes and cleaning devices; $100,000. H. W. Pennock, W. C. Elliott, W. H. Longabaugh, John H. Wilson and E. B. Hansen.

Amato Construction Company, Cleveland; general contracting and construction; $100,000. W. H. Sletzer, Walter A. Bennett, Vincent Zmunt, A. Steen and J. R. Zmunt.

Egyptian Products Company, Wellsville; building supplies; $20,000. John Davis, J. T. Snowden, D. H. Kessel, W. E. Smith and E. H. Cree.

Claycraft Brick Company, Columbus; increase of capital from $100,000 to $150,000.

The Ironton Punch & Shear Company, Ironton; increase of capital from $30,000 to $75,000.

Farmers' Elevator, Grain & Supply Company, New Bavaria; $15,000. Jacob Hornung, Mathias Thome, Joseph E. Thome, Andrew Swary, Charles T. Deitrick, Charles H. Hornung, Mathias Romis, Jacob Swary, Peter Mangus and George Keeterie.

Strong Manufacturing Company, Bellaire; increase of capital from $150,000 to $250,000.

Cincinnati Fly Screen Company, Cincinnati; increase of capital from $1,000 to $60,000.

Indiana.

Bennett - Barnes Company, Terre Haute; to deal in building materials; $10,000. Charles and E. J. Bennett and G. L. Barnes.

Vigo Washed Sand & Gravel Company, Terre Haute; producers; $35,000. C. Stahl, W. C. Doak, C. R. Stahl and George Ehrenhardt.

Oakes Manufacturing Company, Indianapolis; to manufacture auto parts; $10,000. W. D., W. H. and Cora P. Oakes.

Bash Fertilizer & Chemical Company, Ft. Wayne, manufacturers; $500,000. Charles Sumner Bash, Charles Solomon Bash, W. E. Webbe, W. L. Moellering, G. M. Hofman, E. F. Koenemann and W. F. Borgmann.

Beckton Chemical Company, New Jersey; $500,000; manufacturers of pigments; certified in Indianapolis for $40,000; R. S. Hubbard, president.

Herring-Hall Safe Company, New York; revocation of commission to W. K. McHenry, of South Bend, as State agent.

Tyner Coal Company, Indianapolis; increase of capital from $5,000 to $10,000.

Massey Coal Company, Princeton; notice of dissolution.

Hammond Brass Works, Hammond; to manufacture brass valves and other specialties; $35,000. C. H. Mayer, J. E.

Barbed Wire

A superior quality of our own material made up into wire as follows:

J & L 2 and 4 Point Hog and Cattle Standard Barbed Wire, Painted

J & L 2 and 4 Point Hog and Cattle Standard Barbed Wire, Galvanized.

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J & L Special Barbed Wire (No. 14), Galvanized only.

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Brennan, William Wolter, J. F. Lammering and F. S. Carter.

Lynn B. Millikan, incorporated, Indianapolis, general contractors, to take over the Millikan contracting business; $10,000. Lynn B. Millikan, Madore Millikan and J. R. Millikan.

Indianapolis Art Glass Company, Indianapolis; $10,000; manufacturers and dealers. E. G. Spink, D. A. Coulter and U. G. Cassady.

Madison Light & Fuel Company, Madison; public service; $150,000. E. F. Porter, W. C. Bevins and H. L. Hanley.

Lawrence Construction Company, Michigan; to manufacture beet sugar machinery; $30,000; certified in Indiana. J. E. Larrowe, president.

The Woodburn Hardware Company, $25,000. G. Ehresman, J Neuenschwander, L. Klopfenstine, Levina Gerig and J. Neuenschwander.

Burnett Canning Company, Burnett; to operate a cannery; $5,000. T. G. McNeely, E. R. Hayne, John Thompson, J. L. Davenold and John McClintock.

Ardmore Heat & Light Company, pany, Ohio; action to dissolve.

American Cresoting Company, Chicago; increase of capital stock from $2,000,000 to $3,000,000.

Englewood Hoop Company, Kokomo; change of name to Hallulah Hoop & Lumber Company.

Missouri.

F. W. Bussmeyer Gas Producer & Machinery Company, St. Louis; $10,000. Frederick W., Magdelena and William J. Bussmeyer.

Universal Motor Truck Traction Company, St. Louis; $250,000. William H. Taylor, John Beltram, A. R. Shaffer.

New York.

General Steel Products Company, Inc., $25,000. John McLaren, 154 Nassau street; F. B. Knowlton, Edward C. Inderlied, 154 Nassau street, New York city.

Universal Varnish Drying System, Buffalo; manufacture drying apparatus, etc.; $50,000. Israel G. Holender, Louis E. R. French, Charles H. Taylor, Buffalo, N. Y.

The Progressive Typewriter Company, Inc., Manhattan; manufacture typewriters, etc.; $20,000. Charles J. MacLean, 132 Nassau street; George C. Irvin, 116 Nassau street; William P. Wiedman, 132 Nassau street, New York city.

Gray Manufacturing Company, Buffalo; manufacture machinery; $30,000. Thomas Gray, B. B. Pannett, Edward C. Randall, Buffalo.

Peoples Gate Company, Geneva, N. Y.; manufacture metal gates, etc.; $10,000. William N. Coe, George W. Schumann, Geneva, N. Y.; James W. Buchan, Hopewell, N. Y.

National Rolling Mill Company of Cuba, Manhattan, manufacture and deal in iron and steel, etc.; $250,000. Lester S. Bachrach, Norbert B. Kates, 17 State street, Now York city; John C. Brown.

Electro-Sanitation Company, East, Inc., Manhattan; manufacturing sanitary sewage disposal apparatus; $100,000. C. F. Frothingham, 28 Stone street; John C. Sparks, 30 Church street; R. O. Butterfield, 305 West One Hundred and Thirty-seventh street, New York city.

Invincible Aluminum Company, Manhatton; manufacture aluminum utensils, etc.; $10,000. F. A. Jackson, Jay B. Salinger, 105 William street, Harry G. Fromberg, 43 Cedar street, New York city.

Jay A. Richard Company, Schenectady; manufacture guns, firearms, ammunition; deal in hardware, automobile and sporting goods; $72,000. Jay A. Richards, Jesse A. Richard, Benj. C. Wheaton, 253 State street, Schenectady.

Louis L. Crane's Airship Transportation Company, Inc., Brooklyn; manufacture airships, balloons, aeroplanes, etc.; $100,000. Louis L. Crane, C. Crane, 259 Ninth street; John F. Callaghan, 566 Seventh street, Brooklyn.

Forsyth Metal Goods Company, Buffalo; manufacturing metal goods, tools, etc.; $30,000. John H. Price, Akron, N. Y.; Herbert B. Rose, 413 Massachusetts avenue; David N. Whittington, 51 Gallatin avenue, Buffalo.

Painton Brick Company, Troy, N. Y.; manufacture and deal in brick, stone, cement, building materials; $30,000. John J. Painton, George W. Painton, Troy, N. Y.; Edward F. Painton, Hoosick Falls, N. Y.

Advance Rubber Company, Brooklyn; manufacture auto tires, rubber goods, etc.; $150,000. George F. Allison, 115 Broadway, Claude Pinney, 30 W. Forty-fourth street, New York city; W. I. Glover, Englewood, N. J.

Columbia Non-Refillable Bottle Com-

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pany, Manhattan; manufacture bottles vessels, containers, etc.; $125,000. Gustave Glocker, 717 Tenth street, N. W., Washington, D. C.; Milton C. Bradley, 128 Sixth avenue, New York city; Henry Zahn, 128 Sixth avenue, New York city.

Charles A. Edel Company, Inc., Bronx; manufacture hardware, etc.; $20,000. Irving W. Dinslow, 185 Audobon avenue, New York city; Louis J. Edel, 803 Elsmore Place, Margaret F. Karples, 3167 Third avenue, Bronx.

Charles Grifrath Company, Borough Queens; manufacture hardware; $25,000. Charles Grifrath, 255 Steinway avenue, Long Island City; Thomas A. Shaw, 20 Broad street, Walter H. Dodd, 20 Broad street, New York city.

National Rolling Mill Company, of Cuba, Manhattan, manufacture and deal in iron and steel; $250,000. N. B. Kates, L. S. Bachrach, New York city; J. C. Brown, Baltimore, Md.

General Steel Products Company, Inc., Manhattan; manufacture and deal in metals, etc.; $25,000. J. McLaren, F. B. Knowlton, E. C. Inderlied, New York city.

Neenan Elevator Co., Manhattan; manufacture elevators and hoisting apparatus; $2,000,000. William Rice, 3089 Broadway, New York city; Herbert H. Knight, Fanwood, N. J., and Henry C. Workman, Briarcliff Manor, N. Y.

West Rotary Engine Company, Monticello, N. Y.; manufacture machinery; $500,000. August A. West, 494 Marion street, Brooklyn; Baird L. Short, West Collingwood, N. J., and Morris Meyers, 558 West One Hundred and Fortieth street, New York city.

Apperson Motor Car Company of New York, Manhattan; manufacturing machinery, motor engines, motor vehicles, etc.; $10,000. Henry H. and Marie Cannon, 54 West Fifty-fourth street, New York city; Mary E. Grasmuck, Tenafly, N. J.; and Frederick A. and Marion C. Grasmuck, 34 Convent avenue, New York city.

Niagara Metal Weather Strip Company, Niagara Falls, N. Y.; manufacture metal weather strip; $20,000. Frederick S. Franklin and Carolyn H. Franklin, both of Hamburg, N. Y., and Freeman H. Palmer, 45 Manchester Place, Buffalo, N. Y.

Rumely Products Company, Mineola, Nassau county; manufacturing machinery, agricultural imprements, etc.; $50,000. Leo M. and Aloysius J. Rumely, both of La Porte, Ind., and Alonzo Potter, 25 Broad street, New York city.

Safe Harbor Iron & Steel Company, Manhattan; milling, etc.; $375,000. Edith L. Keiner, 252 Madison street, Brooklyn; William S. Evans, 27 William street, New York city, and I. O'Connor Sloane, Jr., S. Orange, N. J.

Cathedral Granite Company, Manhattan; quarry and prepare stone for market; contracting; $100,000. H. L. Dudley, Yonkers, N. Y.; Charles A. Meade, Crestwood, Yonkers, and Herman W. Hoefer, 441 Amsterdam avenue, New York city.

Hagstedt Manufacturing Company, Manhattan; manufacture machinery, novelties, etc.; $10,000. Charles Hagstedt, 77 East Fifty-second street; Joseph Snyder, 318 West Thirty-second street, New York city; Ignatz Lauter, 1322 Prospect avenue, Bronx.

Frederick Truscott & Son Company, Buffalo; general electrical supply and construction business; $50,000. Frederick Bessie S. and George S. Truscott, all of Buffalo, N. Y.

American Elastic Wheel Company, Manhattan; manufacture automobile parts and accessories; $50,000. Cesare Feroci, 7 Nuilio street, Rome, Italy; Frank Corsi, 11 Broadway; Frank P. Ward, 52 East Ninety-second street, New York city.

Curtiss Motor Company, Hammondsport, N. Y.; manufacture motors, engines, motor cycles, vehicles; $600,000. Monroe Wheeler, Bath, N. Y.; G. Ray Hall, Hammondsport, N. Y.

Southwestern Power Company, Manhattan; construct dams, power plants, etc.; $100,000. William D. Johnson, Hartford, Conn.; Frederick W. Kristeller, 100 William street; Frederick W. Livingston, 119 West Forty-ninth street, New York city.

Thomas Sealy, Manhattan; manufacture and deal in oils, prints, chemicals, etc.; $50,000. Thomas Sealy, William T. Lentz, South Orange, N. J.; William J. Doyle, Jr., 334 Decatur street, Brooklyn.

New Jersey.

O'Gara & Maguire, Inc., Newark, N. J.; real estate, builders, contractors, etc.; $125,000. Thomas J. O'Gara, Frank N. Maguire, William H. Reilly, all of Newark, N. J.

Contracts for Dreadnaughts.

Contracts for the construction of the two 27,000-ton super-dreadnoughts authorized at the last session of Congress will be awarded to the New York Shipbuilding Company, of Camden, N. J., and the Fore River Shipbuilding Company, of Quincy, Mass. The Camden company will build a vessel with engines of the reciprocating type, and the Fore River company will install Curtiss turbine engines.

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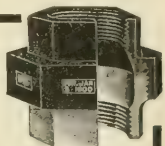

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TESTS OF CONCRETE CLINKER.

INTERESTING tests have been made of concrete and reinforced concrete at Marquette University by Dean Swift, of the Engineering School and some of the students.

The materials for these tests were Huron Portland cement furnished by clinker from the Milwaukee Incinerator, and gravel. The cement had been tested in the regular laboratory and met all standard specifications. The gravel was fine and clean, and for test purposes it was screened through ⅛-inch screen, that passing through being called sand and the remainder called gravel. The clinker is the product from the furnaces at the new garbage incinerator and results from the burnings of a mixture of garbage, refuse and ashes. It looks exactly like the clinker from any furnace, but it is not mixed with the ashes. This is due to the particular method employed in burning. Ordinary cinder concrete is supposed to average about one-third the strength of gravel concrete, but this clinker concrete was better than the gravel concrete made in laboratory.

When the tests were started it was the intention to investigate the strength of reinforced clinker concrete as compared with reinforced gravel concrete. Four clinker concrete beams, with a mixture of one part cement, two parts sand and four parts clinker, were made and tested in the 50,000-pound testing machine in the engineering laboratory. Three of these were reinforced with a ¼-inch Kahn bar, and one with four ⅜-inch plain round bars. Each one was 9½ inches high by 6 inches wide, and the steel placed 1½ inches from the bottom. Two gravel concrete beams of a 1:2:4 mixture were made so as to compare the clinker beams with a standard material. Each of these was reinforced with one ½-inch Kahn bar and were 9½ inches deep. One was 6 inches and the other 7 inches in width. All the beams reinforced with a Kahn bar failed by compression of the concrete under a central load of about 4,000 pounds, the span in all cases being 10 feet.

It was very noticeable during the application of the load that the deflection of the beam varied directly with load up to the point of failure. Even after the beam showed failure the load remained equal to the breaking load for a deflection of about 2 inches. During the application of the load to the beam reinforced with plain round rods it acted similarly to the other up to a larger load of 5,000 pounds when the large crack appeared suddenly.

The table shows a summary of the beam tests, detailed by Dean Swift:

Material	Maximum load.
No. 1 gravel	4,370
No. 2 clinker	3,500
No. 3 clinker	3,480
No. 4 clinker	4,200
No. 5 clinker	5,100
No. 6 gravel	4,000

To determine the actual strength of the concrete used in the beams, sets of 4-inch cubes were made and tested at 7 and 28 days. These tests show exact information which the beams do not.

One set of six 1:2:4 clinker cubes averaged 700 pounds per square at 7 days and 1,120 at 28 days. Another set gave an average of 915 pounds at 7 days and a third set gave 760 pounds at 7 days and 1,519 pounds at 28 days.

These results are by no means complete enough to give to the engineering profession absolute data for design, but they are complete enough to make the following assertions: First, the clinker concrete is better than the ordinary gravel concrete. Second, it is almost if not quite as good as the best gravel

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concrete. Third, it is far superior to cinder concrete. Fourth, if properly mixed it will give uniform results under test. Fifth, it can be used to advantage in mass concrete. Sixth, the tests have not been carried far enough to warrant its use in reinforced concrete. Seventh, the city of Milwaukee can use this material for any of its concrete work and provide an income for running the garbage disposal plant. Further tests are necessary to determine the mixture of cement, sand and clinker which gives the maximum strength for the same cost of materials.

New Canada-to-Gulf Line

The Kansas Utilities Commission has granted permission to the Winnipeg, Salina & Gulf Railroad to issue $$29,997,000 in 5 per cent gold bonds to build the new line at Salina, Kansas.

The issue, which has been sold in London, covers the construction of 1,080 miles of line. H. L. Miller and David Richie, of Salina, were in Topeka last week and got the certificates. It is proposed to build a line from Winnipeg to the Gulf of Mexico and a cross line from Kansas City to Des Moines, New Mexico. The crossing is to be in Kansas, but the route east and west has not been laid out.

The north and south line will enter the State at Oak, Neb., run south to Salina and Lindsburg, Kan., crossing the Santa Fe between Conway and Windom, McPherson county, and down through Kiowa and Oklahoma City.

The construction work will start at Salina early in the Spring on the north and south line, according to Mr. Miller, who said that fifteen men are now making surveys. The bond issue authorized is for the sections between Omaha and Oklahoma City, and between Kansas City and Des Moines, New Mexico.

"Airplanes": This Is Official.

[Washington Cor. St. Louis Globe-Democrat.]

Hereafter heavier than air machines will be known as airplanes, instead of aeroplanes, in the army, if the appropriation goes through in the form it was agreed to in the House Military Affairs Committee. Representative Slayden, of Texas, when the item appropriating for the purpose of aeroplanes was reached in the consideration of the bill, declared he had serious objections to the use of this word. The member from Texas said that airplane was good enough for him, especially as the dictionary made no distinction between the meaning of aeroplane and airplane. The meaning of the two words is identical, he insisted, and airplane is Anglo-Saxon. The word was

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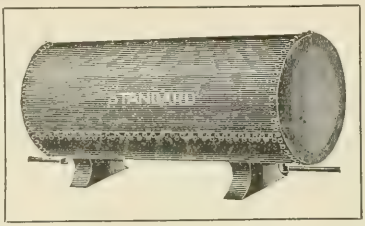

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changed in the bill, and the signal corps must refer to its flying machines as airplanes if it expects to draw any money from the United States to increase its fleet of flying ships.

Interborough Award Closed.

The Interborough Rapid Transit Company has been awarded $109,600,000 new subway contracts in New York that were refused it last summer by the Board of Estimate.

J. P. Morgan & Company have completed all details necessary for the financing of the new subway lines, and the plan as now formulated calls for $150,000,000 of new capital, the entire amount to act as a first mortgage on the Interborough's present property, as it is proposed to retire the $55,000,000 first mortgage 5 per cent bonds, which are callable in blocks of not less than $1,000,000 at 105 and interest on any interest date. Of the $150,000,000 new financing, $54,800,000 will be used by the Interborough for subway construction, the other $54,800,000 being contributed by the city, the total amount for subway construction being $109,600,000. The Interborough will also expend $21,000,000 for new equipment. This leaves a balance of $74,200,000 of new money to be raised, $35,000,000 of which will be used to retire outstanding first mortgage bonds of Interborough and $4,584,000 for redemption of Interborough Rapid Transit notes. This makes a total of $105,384,000 to be used immediately of the new $150,000,000. The balance, $44,616,000, will be held in reserve to finance the new elevated extensions and the third-tracking of elevated lines, which will cost $32,000,000.

"A Man Without a Country."

[Washington Cor. N. Y. Tribune.]

In behalf of "a man without a country" Representative Gardner, of Massachusetts, introduced a bill to-day providing that Congress by special enactment grant American citizenship to Eugene Prince, of Moscow. Mr. Gardner says the case of Mr. Prince is unique, the story dating back to the time when his great-grandfather was an officer in the American navy. As a young man George Henry Prince, grandfather of "the man without a country," left the United States for St. Petersburg to represent his relations, the firm of W. Ropes & Company, exporters of petroleum. He married an Englishwoman and had six children. The fifth child, John Henry Prince, was born at St. Petersburg on November 6, 1862. He has always lived in St. Petersburg, representing American firms, among others the Niles Tool Company, of Hamilton, Ohio, and the Carnegie Steel Works. He has retained his American

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citizenship to this day, and is registered by the Russian government as an American citizen doing business in St. Petersburg under a "billet de sejour." Eugene Prince, his son, has been employed in the offices of the International Harvester Company, in Moscow. He came to America a short time ago to take up his citizenship and enter the Chicago office of the Harvester company. Under the revised statutes, Section 1993, Eugene Prince cannot be recognized as an American citizen because his father never lived in this country. On the other hand, under the Russian law, he cannot be recognized as a subject of the czar. He, therefore, has no standing in the eyes of any government in the world. He cannot obtain a passport as an American citizen or as a Russian subject. There is only one precedent for the granting of American citizenship by special act of Congress. Mrs. Nellie Grant Sartoris, General Grant's daughter, was admitted to citizenship in the United States by special act approved May 18, 1898.

Bridge Project for Rock Island.

The Rock Island and Northwestern railroads are believed to be engaged in an effort to secure a new bridge over the Missouri river at Council Bluffs, Ia. In both instances belief in a heavy increase in traffic north and south immediately upon the completion of the Panama Canal is a moving agency, and the congested conditions daily as a result of the heavy traffic over the one railroad bridge at Council Bluffs.

The plans of the Rock Island have, it is said, gone so far that an estimate of $1,000,000 has been made for the project, and the point at which it is said the bridge will be built is opposite South Omaha and the southern limits of Council Bluffs. At the latter place 400 acres of land was purchased months ago, the identity of the purchaser having been maintained a secret, but it is now believed the purchase was made for the Rock Island.

New Mines in West Virginia.

Eighteen new coal mining plants began shipments or are about ready to begin shipment of coal in West Virginia in 1911, while a number are preparing by having actually begun work on new plants. During the year 55 new power plants were erected; 25 additional openings were made, and 15 new tipples constructed. With these improvements the actual number of mines, counting each opening a mine, is less than in the year 1910, due to the fact that in many instances openings have been abandoned by establishing up-to-date systems in the mines and sending the coal out of

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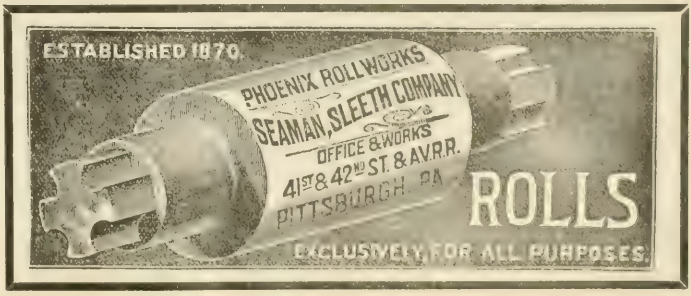

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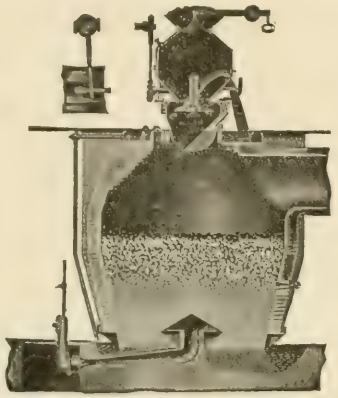

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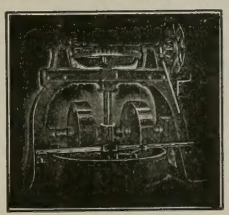

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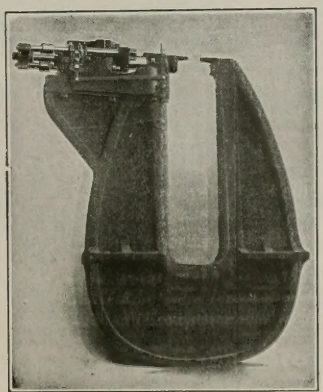

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